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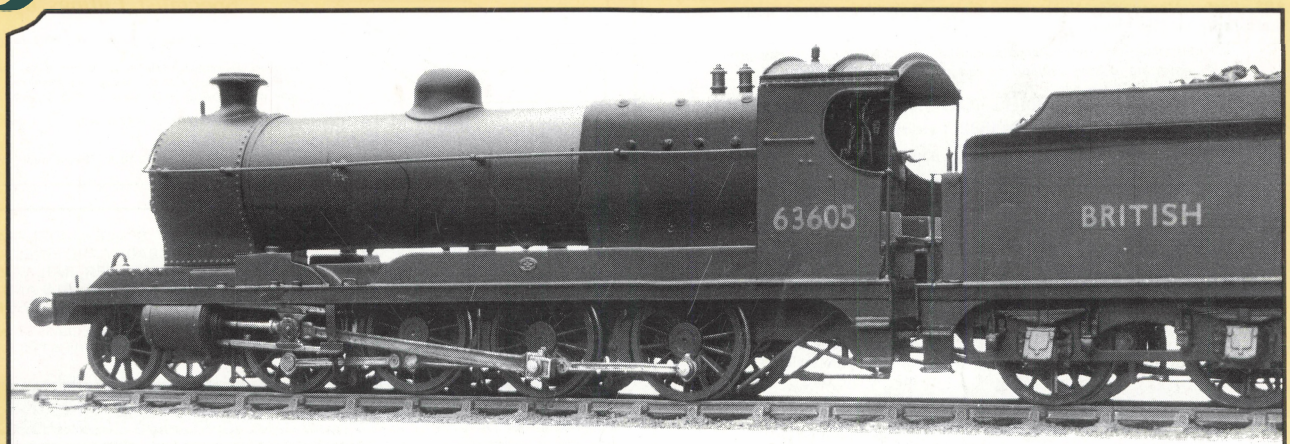

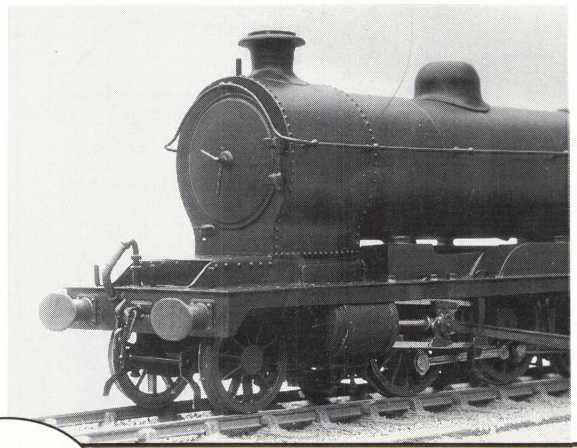

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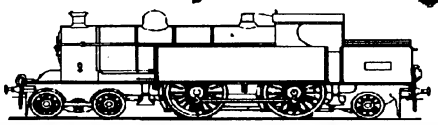

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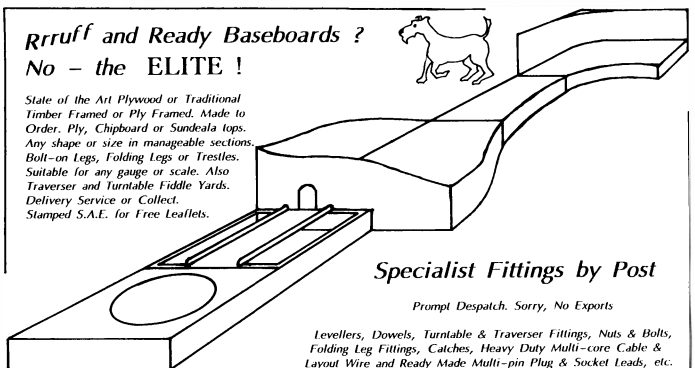

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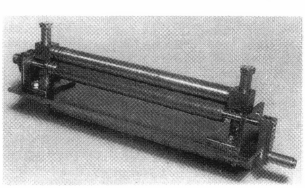

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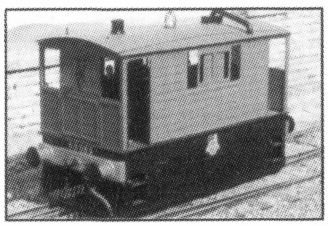

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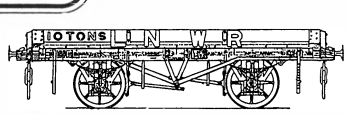

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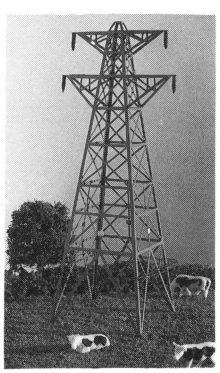

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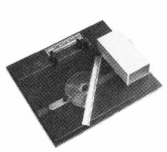

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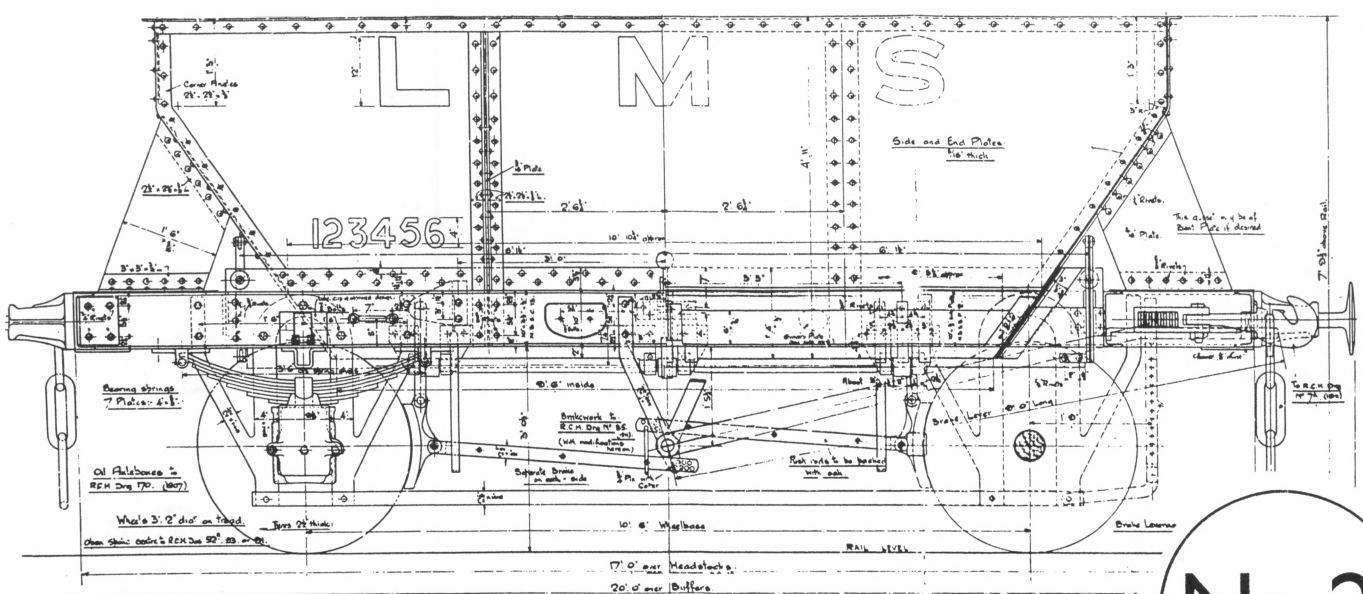

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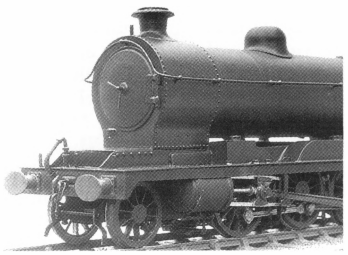

Cover photo: Guy Williams's 4mm scale Robinson 'K' 2–8–0.

Problems still to solve

As you will see from the Letters pages, the question of model railway operation – and exhibition operation in particular – is one that a great many modellers clearly feel strongly about. As well as those making a brave stab at analysing the purpose of exhibition layouts from both sides of the barriers, you will find showgoers stoutly defending layout style and presentation, some who disagree, and some who don't really have any answers but thought they would express an opinion anyway. They're welcome. That is what our Letters pages have always been for and we are content to let our readers take the debate wherever it is bound to go.

At present, the debate is very much centred on correct operation – or the lack of it – and the PR aspects of exhibiting, such as the style of layouts and the way they are physically and personally presented to the paying public. Nobody has yet addressed that other major exhibition problem – how we get as many paying customers as possible to see extremely popular layouts. Thanks to the MRJ Show in 1990, where we had an entire hall-full of layouts that people badly wanted to see, I have keenly-remembered experience of this, and it is a problem one still encounters at the many shows where 'star' layouts are appearing. At present, popular layouts can only be viewed by the small number of people who can be arranged, say, two-deep along the public frontage (or what track plans usually describe as the 'viewing side'). That doesn't stop others from trying to get their noses in, so they crowd the front rows, making them uncomfortable, themselves frustrated and the aisle clogged. After the MRJ Show, I can remember trying to sketch ranks of viewing tiers, like football terraces, and even toying with the idea of sinking layouts into amphitheatre-like pits so that more people could get a look-in. In America, of course, highly popular show layouts have video cameras trained on them so that images of the action can be transmitted to the crowds via large screens perched above their heads – which is a bit like paying to see Pavarotti in concert, only to find that you've bought a ringside seat at a giant telly. The Americans argue, with some justification, that perfectly clear screen action is better than seeing no action at all. It's an interesting question and one, it seems to me, crying out for a radical solution. Anyway, that's my one for the pot.

This issue of MRJ is packed with superb, practical stuff – from the likes of Guy Williams, Sid Stubbs, John Hayes and David Jenkinson, covering everything from scratchbuilt locomotives to guttering for model housing. We hope you enjoy reading it as much as we have enjoyed bringing it all together for you.

Bob Barlow

MODEL RAILWAY JOURNAL

Edited by Bob Barlow. Designed by Paul Karau.

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SMALL SUPPLIER FORUM

TRADE GRAPEVINE

Having heard little from MJT SCALE COMPONENTS for a while, more's the pity, it was a real pleasure to see Mike Trice's latest products landing on the doormat earlier this summer. Two new 4mm items will be of particular interest to GWR modellers: pairs of 7ft plate and 9ft pressed plate cosmetic bogie sets (items 2234 and 2238 respectively), each costing £4.76 per pair, plus postage. These were mastered by John Hayes, so they're not just good – they are exquisite and superb value. Another really useful item is a set of 12 LNER internal compartment doors with characteristic deep windows and matchboarded lower panels. The cost is just £1.74 for the dozen. All orders must include £1 postage. MJT is at 41 Oak Avenue, Shirley, Croydon, CR0 8EP. The MJT catalogue can be had in return for £1 and an SAE (unless ordered with other items).

'It really never has been easier!' enthused Steve Dunkeyson, publicity officer of THE 2MM SCALE ASSOCIATION, as he handed over samples of new 2mm finescale products – coach bogies kits. There are a series of nickel-silver etches of bogies skeletons to cover 7ft, 8ft 6in, 9ft and 10ft wheelbase, plus nine different cosmetic bogie side castings to represent the key GWR types, plus examples from the GNR, LMS, LNER and Southern. A full pair of bogies, with frames, 7mm diameter wheels and bearings work out at £4.71 per pair. You need to be a member of the Association; contact the membership secretary at 104 Halifax Road, Brierfield, Lancs, BB9 5BQ.

New from COMET MODELS is a superb 4mm chassis pack for the mighty coal-hauling LNWR/LMS/BR G2 0–8–0. Designed for the Gem or Brassmasters (or scratchbuilt) body, it is all nickel silver and comprises detailed frames, spacers, coupling rods and correct-pattern LNWR brake-hangers and pullrods. Price is £12 plus £1 post. Another product in the 'good idea' category is 4mm tender underframe kits to give a finescale replacement for RTR or poor-quality kit chassis. The kits contain the water tank floor which acts as the base for the assembly, outer frames, drag beam and buffer beams, all etched in 12-thou brass. Axleboxes, waterscoop, etc, are whitemetal and buffers and steam/vac pipes are cast brass and nickel-silver. Currently available are Stanier 7ft 6in x 7ft 6in with either early, late or roller-bearing axleboxes, and a Fowler 6ft 6in x 6ft 6in. Price is £8.50 plus 75p post. Comet can be found at 105 Mossfield Road, Kings Heath, Birmingham, B14 7JE (0121 242 2233).

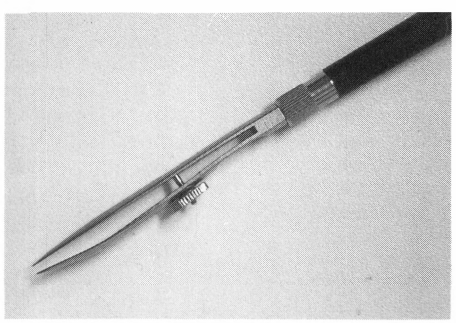
New from FOX TRANSFERS of the Old School House, 12 Broughton Street, Leicester, LE1 2BA (0116 262 6868) are splendid sets of transfers for Pullman trains in both 4mm and 2mm scales. You can get every Pullman car name, including for rebuilds, plus lining, crests and numbers, from the earliest Pullmans right up to those running on today's InterCity trains. Prices range from £3.95 up to £7.95 per set, plus 40p post. An SAE will bring you the full Fox 'Pullman Special Issue' list – excellent stuff.

The DOUBLE O GAUGE ASSOCIATION is to be congratulated on its first kit – an 'enhancement set' for the Lima BR Mk I coach. Specifically designed to encourage modellers into the improvement mode, the parts produce a model that's pretty close to the definitive Mk I. The kits include flush glazing, replacement Bachmann bogies, Keen Systems close couplings and etched and cast fittings. There are kits for the BSK corridor brake second (£7.85), SK corridor second (£7.50), RB restaurant/buffet (£8.25), CK corridor composite (£7.50) and BT full brake (£7.85), all plus £1 post. DOGA members get a discount on these prices. Orders to DOGA at PO Box 100, Crawley, West Sussex, RH10 1SA.

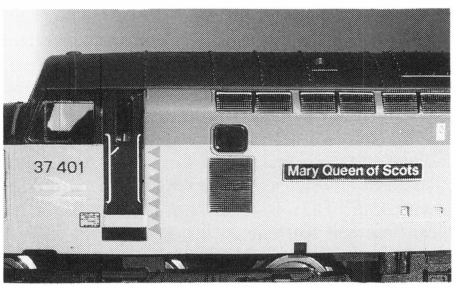
Latest 4mm scale releases from PARKSIDE DUNDAS are an LNER standard cattle truck (Diag. 39) – a re-issue of the old PC50 kit, withdrawn last year – and a BR ale pallet wagon (Diag 1/028), a rebuild of the BR standard tube wagon. Both are injection moulded and cost £4.95. Parkside kits are widely available through the model retail trade, or direct from the company at Millie Street, Kirkcaldy, Fife, Scotland, KY1 2NL.

BRASSMASTERS' latest 4mm kit release is for an LNWR trolley wagon, diagram 96, as built in 1907 and lasting until the 1960s. They were used for carrying loads of up to 40 tons, had an 18ft well and were carried on two four-wheel bogies. The kit is in etched brass

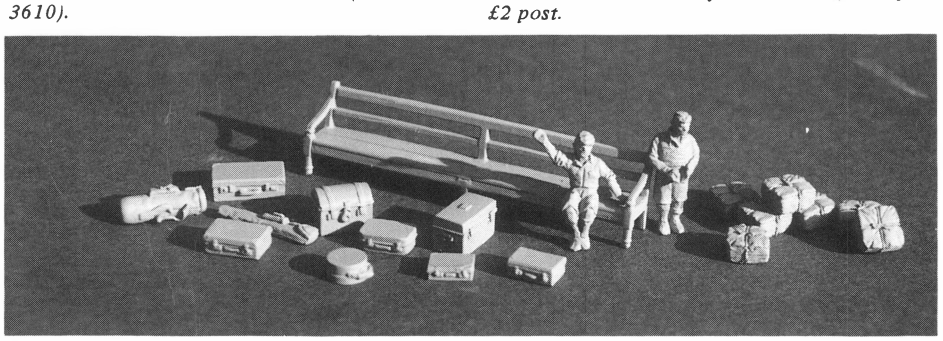
Continued on page 174



Ian Rathbone, the loco painter and kit builder, has located an ideal German-made bow pen for lining, and is now selling them direct. Ian hones the points for use with Humbrol paints and issues full instructions on how to use them. They cost £10 each from 5 Bittel Lane, Barnt Green, Worcestershire, B45 8NS (0121 445 3610).



From Harburn Hobbies of 67 Elm Road, Edinburgh, EH7 4AQ (0131-556 3233) is a new limited edition locomotive commissioned from Lima and based on Class 3714 No. 37 401 Mary Queen of Scots *in Speedlink livery. Fitted with radio electronic token block equipment, the real loco has been greatly used on the West Highland Line. Although allocated to the freight sector, it regularly hauled the now legendary 'Deerstalker Express' sleeper train and daytime passenger services in the peak summer months. As with earlier Scottish-subject commissions of 500 pieces, the model comes with a numbered certificate and details of the prototype, plus some history – in this case, the sad tale of Mary Queen of Scots from her ascension to the crown at only six days old, her formative years in France, her three unfortunate marriages, imprisonment and eventual beheading! Subjects don't come much more Scottish than that . . . Price of 37401 is £46.95 plus £2 post.*



This photo shows a group of the latest 4mm scale releases from Monty's Models (writes Paul Marshall-Potter). The castings are all whitemetal with good detail and few casting mould lines in evidence. Shown here are two boys trainspotting, suitable from the 1930s up to the 1960s (£1.50), bundles of newspapers (£1.75) and a selection of luggage with very good detail (£1.95). The two lads are sitting on a GWR station seat, available as a pack of three (£3.75). The castings for these ubiquitous seats are particularly well done, the turned legs showing well, each seat comprising four components. Monty's Model Railways can be found at PO Box 95, St. Leonards-on-Sea, East Sussex, TN38 0ZB, and an A5 SAE and three first class stamps bring the latest brochure. Worth looking at for 7mm modellers is a new range of figures originally intended for the model car enthusiasts. Called Track Pass and generally depicting motor racing personnel, the range is again whitemetal and good quality. For British railway modellers, certain mechanics and other figures will be quite appropriate for 7mm use and are well worth investigating. Prices are around £2.90 per figure. They can be found at Grand Prix Models, 3 Noke Lane Business Centre, St. Albans, Herts, AL2 3NY (01727 845645, Fax 845858). GPM, by the way, have a mail order minimum of £15.00.

CHEMICAL BLACKENING

JOHN HAYES passes on some techniques and product sources for taking the unrealistic shine off new models. John's models are 4mm, but the processes outlined here are applicable regardless of scale:

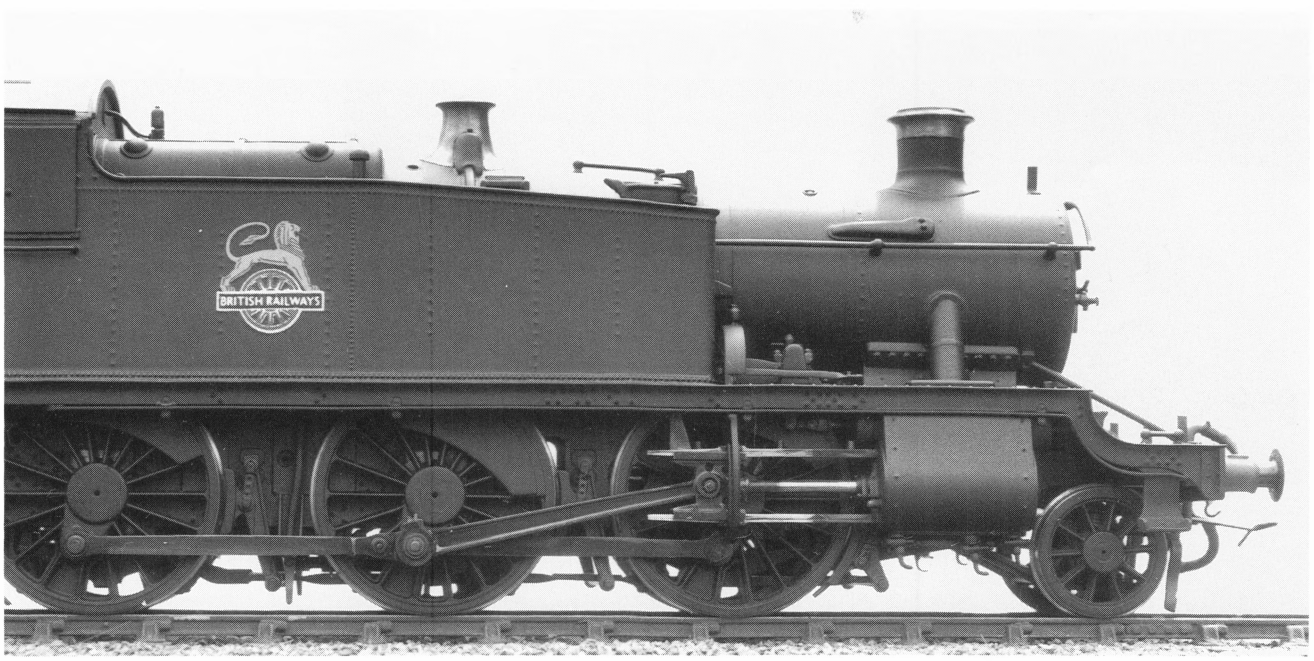
Weathering unpainted metal components on models so that they still look as though they are actually made of metal is difficult using paints. I have found that most convincing results are achieved using metal blackening salts. Various metal colourings are available from Carr's for brass, nickel silver and steel, but the products I prefer are obtainable from sporting shops which deal with guns, etc.

The secret of success is careful preparation of the parts; they must be completely free of solder which will not accept coloration, and they must also be totally grease-free.

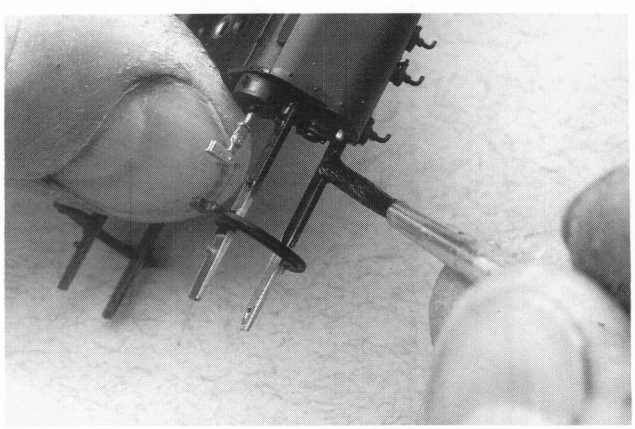
To illustrate this feature, I have weathered the bright parts of a newly finished model before any weathering is done. First the parts to be coloured are burnished with a fibreglass brush or fine wet-and-dry to achieve a smooth bright surface. They will now need degreasing as any contamination, even fingermarks, will prevent the colour taking properly. Using Carr's Acidip in a plastic container, I simply dip components for a few seconds and then rinse them in clean water and lay them on a clean tissue to dry. I have found acetone works equally well as a degreaser; this is available over the counter in chemists. Use tweezers for all handling of parts at this stage.

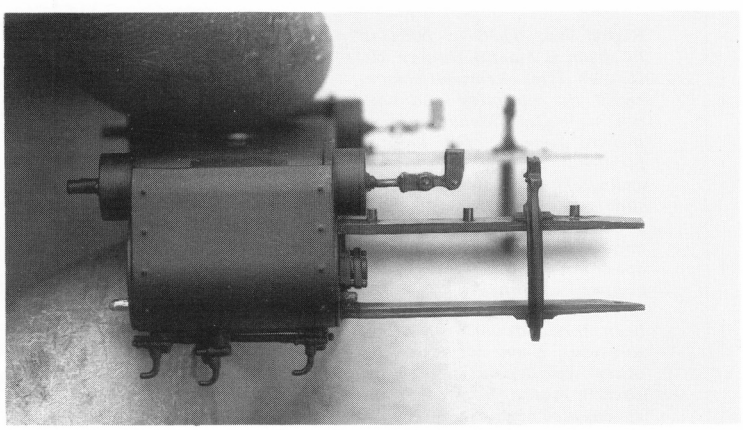
I have found the blacking solution is best applied with a brush or cotton bud using a rubbing technique to gradually build up the patination. If the parts are simply dipped, they go a sooty black very quickly which is not what we want.

Right: *No. 6130 as built to P4 from a Martin Finney kit.*
Below: *After chemically blackening the coupling and connecting rods, slidebars, etc, as shown overleaf, the loco is pictured all back together again. The bright parts, i.e. slidebars and piston rod, have been polished with fine wet-and-dry. Although not so apparent in this picture, the copper chimney top and safety valve bonnet have also been toned down with dilute solution. Even without any other weathering, the engine already has a more working appearance about it.*

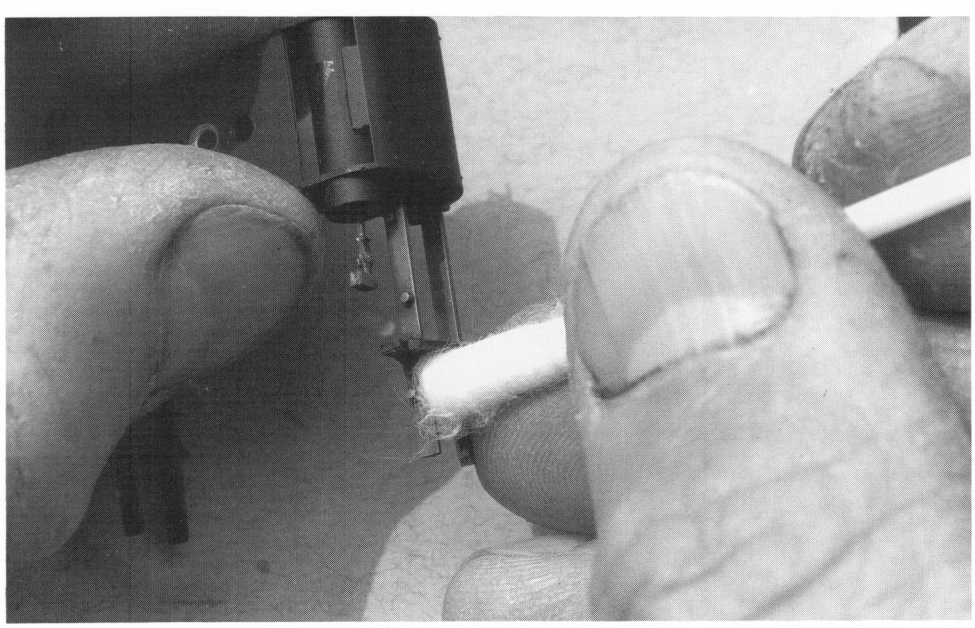


Left: *Birchwood Casey Aluminium Black. This works well on brass and nickel silver.* Centre: *Carr's Acidip for degreasing parts.* Right: *Comet Super Blue for steel parts.*





Left: *Applying blackening solution to slidebars . . .* Right: *. . . to achieve this result.*



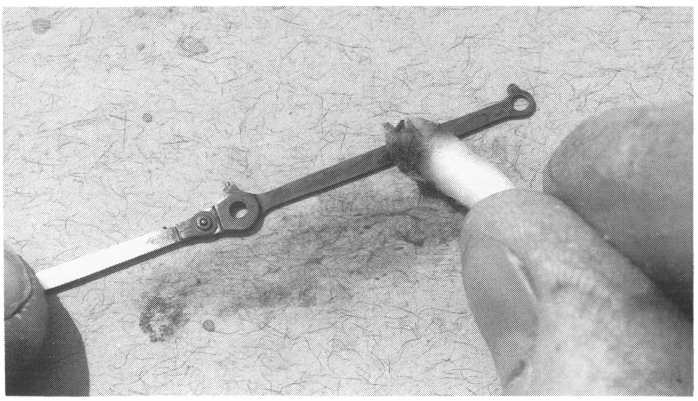
Burnishing the matt surface with a cotton bud.

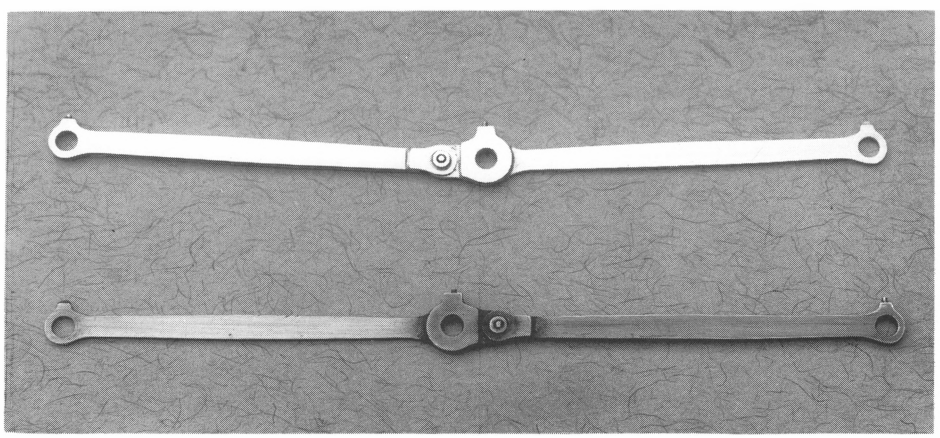
However, using a bud, a bit more subtlety can be achieved, especially on motion parts.

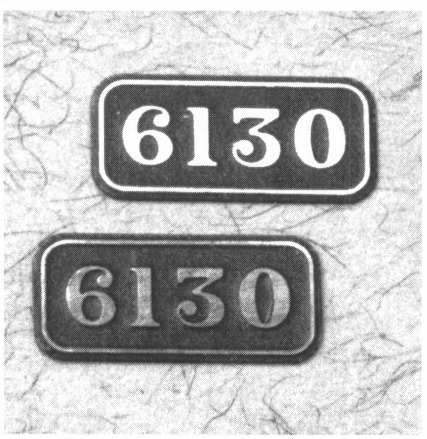
Building up the colour slowly in this way also reduces the chances of flaking, which can happen if the solution is applied too strongly. All this is largely trial and error and if the results are not satisfactory, it can all be removed easily with a fibre-glass brush and gone over again.

When the desired colour is achieved, the parts are rinsed in clean water to remove any salts, and then dried off. The surface will be totally matt and can be burnished with a cotton bud.

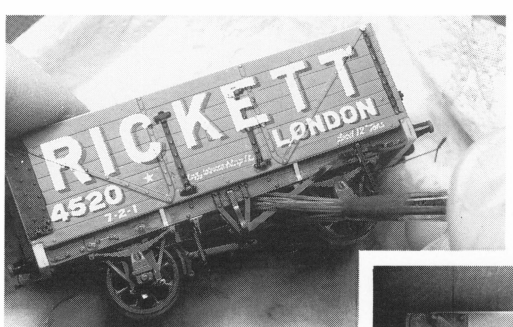
On motion parts, an oil sheen can be achieved with a smear of light oil or wax polish. Cabside numberplates can also be treated with a dilute solution in the same way to achieve an in-service look.







Examples of before and after treatments.



Here is a wagon with Masokits etched brakegear treated in the same way. This gives a good basis for subsequent weathering which can be done with a basic dry-brushing technique, which avoids clagging up everything with paint.

MAUNSELL CORRIDOR COACHES in 7mm

DAVID JENKINSON reviews Slater's new SR corridor coach kit:

I have mixed views on kits, probably because I am impatient. When Slater's announced their new SR corridor coach kits, I looked forward to a bogie coach kit which did not demand the skills of an advanced metallurgist nor require excessive time to assemble. Since I needed a through carriage from the South Coast for my Kendal layout and the Southern brake composites (just in period with my scheme) were built for this sort of job, the decision was easy – and I did not have to do any basic research! The kit broadly justified my initial optimism.

On opening the box, first impressions were favourable – clear instructions with beautifully-drawn perspective diagrams and quality components. I had gone for the lower price option with plastic bogie construction for reasons I will explain later.

I devoted about an hour to examining the kit before starting, and soon realised that the instructions were a bit lighter than in many of Slater's kits and might cause a few problems if you have never previously made kits from this source, so I propose to incorporate what I hope are a few useful hints as I go along. Obviously, it is vital that the cast/moulded components are examined carefully for flash before assembly. The kit is so well-dimensioned that the slightest amount of flash can be critical, so get rid of it first.

UNDERFRAME AND BOGIES

There is logic in starting with underframe and running gear, even though I do things the other way round when scratchbuilding. When I decide to use kits, most attention is given to ensuring that the running parameters fit my needs rather than getting too concerned about the last micron of dimensional fidelity. In the case of Slater's products, I had no worries about whether or not it would look like a Southern Railway carriage – the only real concern was whether it would match the rest of my stock.

I decided that I would model the carriage with the proper Pullman-type gangways supplied and assumed that gangway adaptors (which some of these carriages had) were fitted to the LMS coaches to which it would be coupled. It would thus need to be modelled with buckeye dropped and buffer shanks extended. Given my tight radii, I like to run carriages with very soft side springs and in the case of this model, if the springing was too firm, I felt that I may have to retract the buffers to meet my operational criteria. As it happened, the designed buffer springing, as finally assembled, was soft enough for my purpose, so I could retain the rather clever arrangement which the manufacturer provides.

The kit is provided with cosmetic buckeye couplings of a most convincing appearance and I reckon the model would be an excellent candidate for working buckeyes if you are so minded, although such things are irrelevant to my current plan. My carriages mostly run in semi-

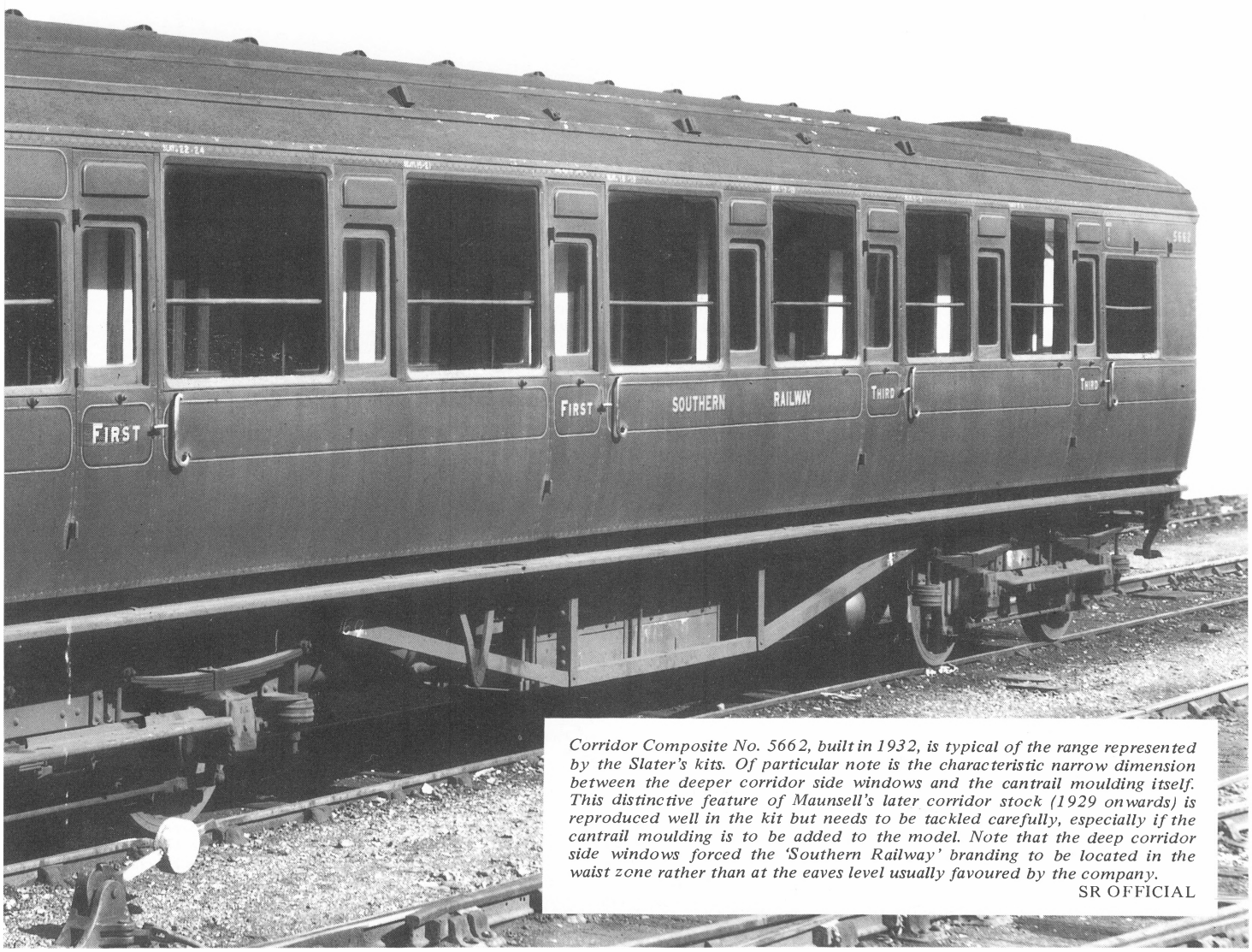
fixed sets, and where gangwayed stock is concerned, it is usually coupled together before I fit the carriage ends and roofs in place, thus avoiding much frustration.

The assembly of floor and solebars is easy, but beware when cleaning off flash from the floor edge that you do not remove the very shallow ledge in the belief that it is a blemish – which is what I did, fortunately without ill effect! It is shown on the drawing and is put there to aid positioning of the side members, so with a bit of extra care at this later stage, I was able to compensate for my own stupidity.

In spite of reading the instructions prior to assembly, I decided in some cases to alter the sequence where it would not give rise to subsequent problems. The first example is the buffer assemblies where the manufacturer suggests they be fitted before adding the solebars. I much prefer to leave things like buffers and couplings to a much later stage (ideally after painting) where they are less likely to get damaged, but on this kit, the buffers really must be fitted before painting – the eight springs involved, two per buffer, would give you nightmares if you were to try and fit them after final assembly. However, I found it possible to leave them until almost the end of the underframe assembly (i.e. after Stage 10 of the instructions). Likewise, having adjusted the corridor connection rams (Part 22) for a smooth fit through the headstock, I did not leave them in situ as suggested but set them aside until I fitted the gangways.

It is no bad idea to *prepare* the buffers at this stage and get them ready for fitting. The only tricky bit is to ensure an easy fit between the lost wax castings which are needed to make up the complex buffer units. They are beautifully cast but tight-to-fit as provided, so they do need a bit of preliminary attention with fine files if a free-moving unit is to result. It is also sensible to prepare the couplings (Stage 9a) at this point and also make provision for the later fitting of steam and vacuum hoses. This is shown at the very end (Stage 23) of the instructions – which, in my opinion, is a tad late to tell you to drill the fixing holes in the buffer beam *before* assembly!

Thereafter, the underframe is assembled as per the instructions and goes together beautifully, though I would recommend that with one exception – the vacuum brake cylinder V-hangers which are easier to fit before the truss rods go in place – you install all the plastic parts before getting to grips with the metal components. Also, in spite of Stage 5 suggesting that you should fit



Corridor Composite No. 5662, built in 1932, is typical of the range represented by the Slater's kits. Of particular note is the characteristic narrow dimension between the deeper corridor side windows and the cantrail moulding itself. This distinctive feature of Maunsell's later corridor stock (1929 onwards) is reproduced well in the kit but needs to be tackled carefully, especially if the cantrail moulding is to be added to the model. Note that the deep corridor side windows forced the 'Southern Railway' branding to be located in the waist zone rather than at the eaves level usually favoured by the company.
SR OFFICIAL

the hand brake standard at this point, don't do it. It is far easier to work on the chassis upside-down and flat on the bench until all underframe detail has been installed.

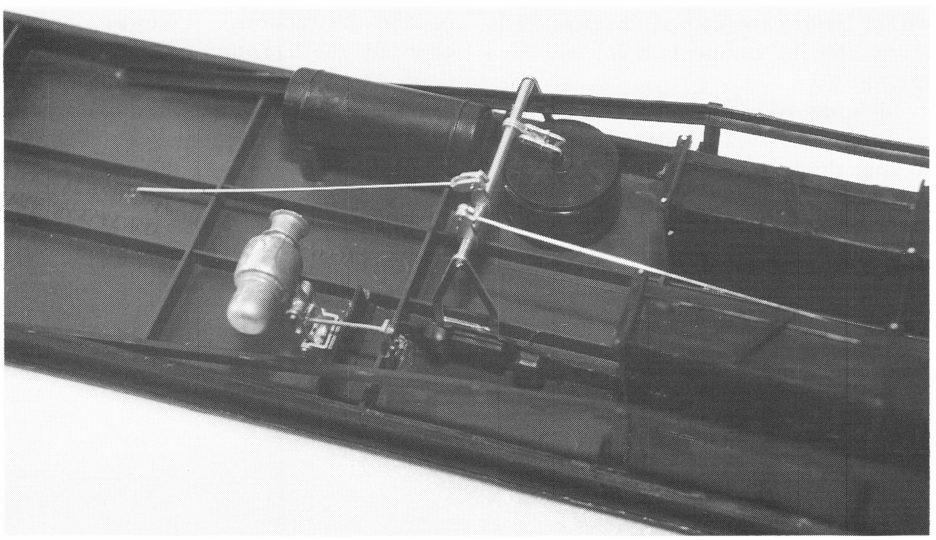
The only truly tedious element of the underframe is the brake rigging. It is nicely designed, well explained and, of course, fabricated from etched brass and wire, but I found it a bit of a pain to get right, and all my latent hatred of etched metal components came out as I wrestled with fine wire and microscopic bits of folded brass. I used the thinnest form of cyanoacrylate for this operation, thinking it would be more suited than solder (which I would normally use). Had it not been for this article, I would probably have left the rigging off – you can hardly see it when the carriage is right way up, and all it does is add about four hours to the assembly process.

One or two practical hints may help. The stepboards should be added as soon as their support brackets are fitted (Stage 9), even though they are not shown as needing to be fitted until Stage 21, after the bodywork. The lost wax support bracket castings, added at Stage 9, project from the solebars like little teeth and are very vulnerable. It therefore makes sense to protect them by adding the stepboards. In fitting the brackets, the two tiny spigots which locate each one to the solebar are also a bit delicate and the solebar holes should be opened out to make them an easy fit. I found the trial-and-error use of a taper broach quite helpful. Fix with cyanoacrylate and, once set, nip together the projecting spigots behind the solebars by way of insurance.

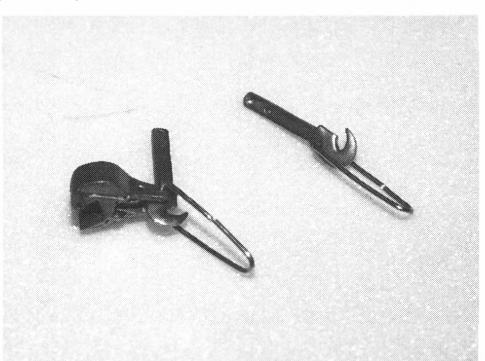
The stepboard itself is in two parts and I found it helpful to reinforce the centre join with a bit of scrap black Plastikard below the stepboard. The latter is then fixed on top of the brackets with cyanoacrylate and there is a nice prototypical gap between stepboard and solebar – something I do not usually bother about when scratchbuilding. All you need to do is fix the stepboard to the extreme end brackets (and maybe one at the centre) to establish the correct position and then fix the rest.

At this stage, the buffer units were added, along with the steam/vacuum pipes. The buffer springs are a bit tricky to manoeuvre into place but nothing which cannot be overcome with a bit of care. Perhaps the most awkward task is to fit the plastic end stop (Part 24) to the buffer shank after the phosphor-bronze spring is in place. The moulded hole is fractionally too small, but open it up too much and you get a sloppy fit. Before fitting the component, I first 'screwed' it onto the end of the buffer shank to create an interference fit and then removed it and slightly opened it out on one face with a broach. When reassembled with spring in place, this over-large start-diameter allows the component to be push-fitted onto the buffer shank, after which a quick clockwise twist or two with pliers or tweezers will hold it firm without adhesive.

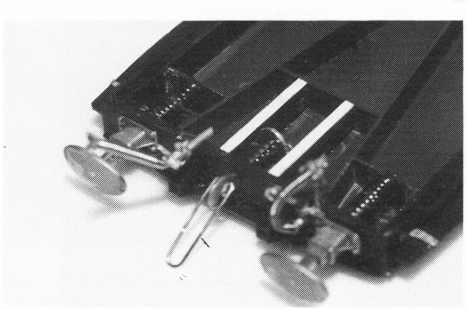
I sought vainly for information in the instructions regarding the positioning of the end-to-end pipework, provided in the kit as suitably-dimensioned plastic rod. There was a vague suggestion at Stage 21, but no exact positioning or dimensions

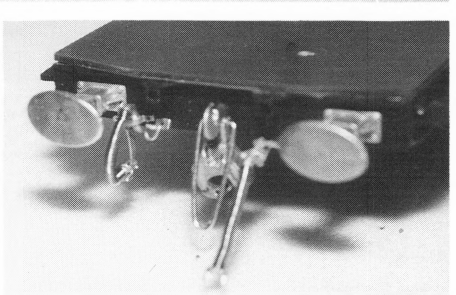


Detail view of part of the carriage underframe under construction.



I decided to fit a dummy buckeye plus coupling link at the outer (visible) end of the carriage and a simple link at the inner (hidden) end, based essentially on the presumption that my model was to be marshalled at one end of a train of LMS carriages. Both options are possible from the components offered and these views show both arrangements prior to installation on the carriage.





Left: *View showing coupling and buffers installed below what will be the inner (i.e. non-brake) end of the carriage as marshalled on my layout. The lost-wax supports for the footboards are also clearly visible, their projecting end spigots being nipped together behind the solebars for extra strength. The picture also shows the modification to the bogie fixing by the 8BA bolt set into the floor from above to form a pivot pin for the bogie itself, along with the thick spacing washer.* Right: *The outer end headstock, showing the dropped buckeye and what I hope will be seen, after painting, as a fairly inconspicuous coupling link to facilitate the coupling of carriage to locomotive without having to fight to get the locomotive coupling shackle attached to the hidden hook set close below the gangway.*

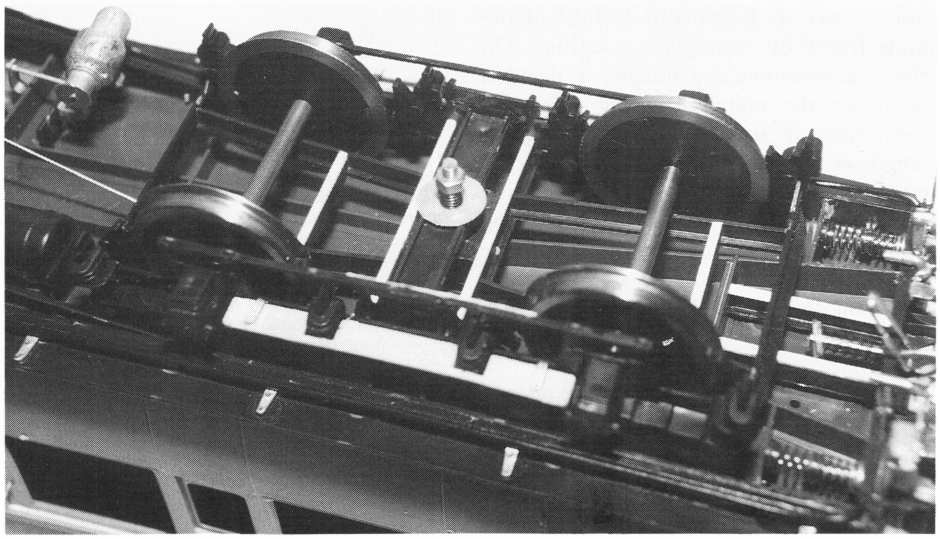
are offered – one of the few real criticisms I can find to make – so I resorted to pictorial evidence. As far as I can see, the brake and heating pipes ran along the sides of the carriage below the stepboards virtually out of sight, so it would be no big deal to omit them. As it was, I compromised – not being certain as to how they terminated at the carriage ends, I simply guessed!

I completed the underframe with all details in about 12 hours, of which I reckon four were taken up with thinking time and brake rigging and at least another hour or two identifying, separating and cleaning up the individual bits and pieces from the various lost wax and plastic sprues. Related to the time I would expect to take on a scratchbuilt alternative, this is acceptable in relation to the higher first cost and arguably greater detail which the kit offers.

I had chosen Slater's plastic-bogie option for several reasons, not least that Slater's plastic moulding is first class and looks just as good under paint as more sophisticated alternatives. What's more, it's cheaper – and I'm a Yorkshireman! They went together like a dream, exactly as per instructions. I thought of incorporating some form of compensation, but eventually decided to build them according to the instructions on the basis that my track would not let them down. The fitting of the brake shoes needs care – they are very fragile and I was fearful of their susceptibility to damage, and also that they might impede the rotation of the wheels. All went well, but since they can hardly be seen, if future experience indicates that they are an operational nuisance, a tweak with the craft knife will eliminate the problem permanently! Another useful tip is to fit the sidesteps to the sideframes before assembling the bogies. The instructions suggest this can be left until after the bogie is complete, which I did, but, on reflection, it would have been simpler to do it first, given their delicacy.

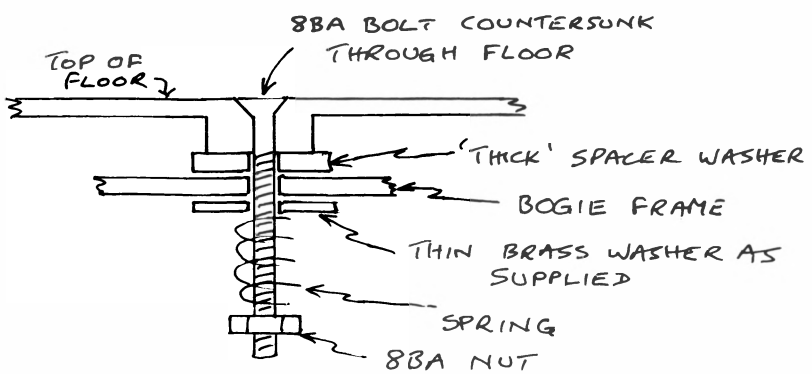
I mentioned compensation which, I suppose, could be incorporated with a degree of modification, but I found that one can achieve a measure of frame flexibility by a simple expedient – when fitting the end transoms, do not fix them to the sideframes, thereby leaving their outer ends free to move relative to the sideframes. This is how I assemble my own cast metal bogies and it allows just enough twist in the bogie frame, given enough carriage weight, to take care of most track problems.

The manufacturer recommends that the bogies are fixed to the underframe with 8BA bolts (presumably by self-tapping themselves into the reinforced part of the carriage floor) with a washer (provided) separating bogie from floor. I also discovered during a dry run that if assembled this way, the carriage would ride too low and the bogie frames be at risk of catching the solebars on sharp curves. When measured accurately, the height discrepancy turned out to be around a millimetre so it was not difficult to cure by fabricating a new thick washer from 0.040in scrap Plastikard. By then, I had also worked out that a better method of bogie fixing was possible, similar to my own mounting system which has stood the test of over 20 years of operation. My worry was that relying on the self-tapped threads in the plastic floor might, over time, prove a bit too optimistic, as bogies need to be regularly removed for cleaning and servicing. My alternative was to use a countersunk 8BA bolt about 25mm long, located through the floor from above and fixed in place permanently with cyanoacrylate. The bogie itself is then located onto this bolt, using the thick washer to get the proper spacing, and held in place by an 8BA nut, separated from the bogie by a fairly soft form of spring. The diagram and picture show what I mean and although I do not suggest that the manufacturer's method is unsatisfactory, I do feel that this modification is an improvement if you have the bits in your scrap box.



One end of the near-complete carriage from below, showing the modified bogie fixing which utilises a nut, spring and washer on a pre-positioned 8BA bolt through the floor.

Fig. 1



SMALL SUPPLIERS FORUM *continued from page 162*

with lost wax and whitemetal castings and costs £18 post free from Brassmasters at PO Box 1137, Sutton Coldfield, West Midlands, B76 1RG.

The quiet roads and deserted car parks so often seen on modern-image 4mm railway layouts should soon be a thing of the past. BEACON MODELS have introduced a new range of 4mm kits of modern cars and vans. We're told that they are moulded in a clear resin, are simple to assemble and, by their nature, are pre-glazed. Interiors are fully detailed and allow for the installation of driver and passenger figures. First model in the range, the '92 Escort, is in production and is available (post only) from Beacon Models, 39 Leighton Close, Great Barr, Birmingham, B43 7HY. Price: £3.50 post free.

JOHN K. FLACK, tools and materials supplier to modelmakers near and far, has just issued a new catalogue – unbelievably, his 27th. Even more surprising is that he's still adding new lines to his stock and now carries just about every type of miniature and sub-miniature metal strip, section, tube, rod, wire, sheet, drill, tap, nut, bolt, washer and screw that any scratchbuilder or kit enhancer could possibly want, plus quite a few items they probably never knew they wanted. Among new additions are brass strip that is 0.4mm wide by a variety of thicknesses, L-section strip 0.8 x 0.8mm and 1/32in and 3/64in outside diameter brass tube. John also sells Cobex and clear acrylic sheet and rod, veneer and basswood sheet and strip, masses of styrene sheet and sections – including a range of newly-introduced half-round strip – plus tools, blades and quite a number of ready-made detail parts and components. At a cost of just five first-class stamps, you really shouldn't be without this list. John K. Flack is at 1 Meadow Bank, Kilmington, Nr. Axminster, Devon.

SOUTH WALES TRANSFERS has produced a range of waterslide transfers in 4mm scale for use on BR(WR) Toad goods brake vans and DMUs. The 'Restricted User' panels for BR(WR) Toads come in a range of 15 place names all in South Wales covering an area from Whitland in the west to Severn Tunnel Junction in the east. There is also a separate 'Not in Common Use' panel. Printed white on a black background, they retail at 80p a pair. There are also two DMU destination blinds each with nine lines. Most destinations are in South Wales but Gloucester and Shrewsbury are included together with the ubiquitous Special. They retail at £1.25 a sheet. Full list is available by sending SAE to South Wales Transfers, 62 Squires Gate, Rogerstone, Newport, South Wales, NP1 0BQ.

PENS AND ACRYLICS

New lining pens and inks recently submitted for evaluation from Freestone Model Accessories may be of interest to modellers who find lining and lettering of models difficult using traditional methods, i.e. bow pens, brushes, etc. *(writes JOHN HAYES).*

The pens are made by Mecanorma in France and the colours from Royal Sovereign under the brand name Magic Colour Liquid Acrylics. For our purposes, the inks consist of a range of semi-translucent and fluorescent colours.

The inks were tried in 0.10mm and 0.25mm pens and no problems were encountered with ink flow or drying in the pen, even after several weeks without use. This bears out the claim by Freestone that they have had a pen on test for over a year with no problems.

The pens are very easy to use and, being water-based, any mistakes are easily corrected. They were tried on enamel and cellulose surfaces with equal success.

Once dry, the inks are water resistant and quite durable, a coat of varnish being necessary for lasting protection.

My only reservation is the opacity of the colour which is not as strong as traditional lining with enamels. Having said that, their ease of use makes them an attractive option and well worth trying.

Colours are available in 28ml jars at £3.00 each. The pens are available in sizes 0.01mm–2mm at £13.00 each. For more information contact Freestone Model Accessories, 28 Newland Mill, Witney, Oxon, OX8 6HH. Tel: 01993 775979.

Misc.

PENDON OPEN WEEKDAYS

Pendon Museum has announced a weekday opening this summer. Last year's trial was so successful that the museum will be open from 2.00 p.m. to 5.00 p.m. on Wednesdays during July and August in addition to its normal opening on Saturday and Sunday (also 2.00 p.m. – 5.00 p.m.). On Bank Holiday weekends the museum opens at 11.00 a.m. Pendon is located in Long Wittenham, 3 miles north-east of Didcot. The current special attraction at the museum is an exhibit about the construction and operation of the Wantage Tramway.

WARLEY TICKETS

The Warley National Railway Exhibition comes around again in October and advance tickets are already on sale. Buy in advance and you get into the show slightly earlier than everyone else, thus easing congestion, and also have the chance to win prizes of £40 and £10 in Warley's prize draw. Advance inquiries (with a large SAE) to 52 Calverley Road, Birmingham, B30 8EW, or credit card purchases can be made from the NEC box office on 0121 767 4499.

SOCIETY NOTES

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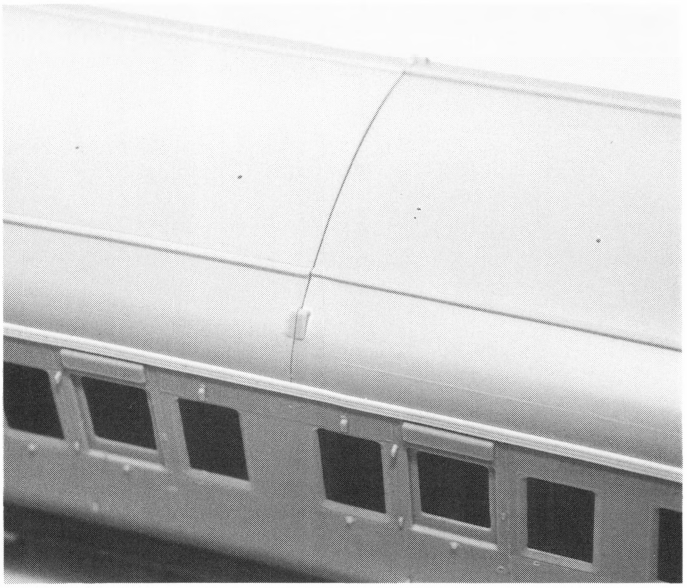
applied to the extreme top edge of each side so as to project above the side itself. The diagrams (*Fig. 2*) try to show the principle. The amount of overlap of moulding onto the carriage side is less than 1mm, but since the cantrail strip is continuous, it is not as weak as you might suppose.

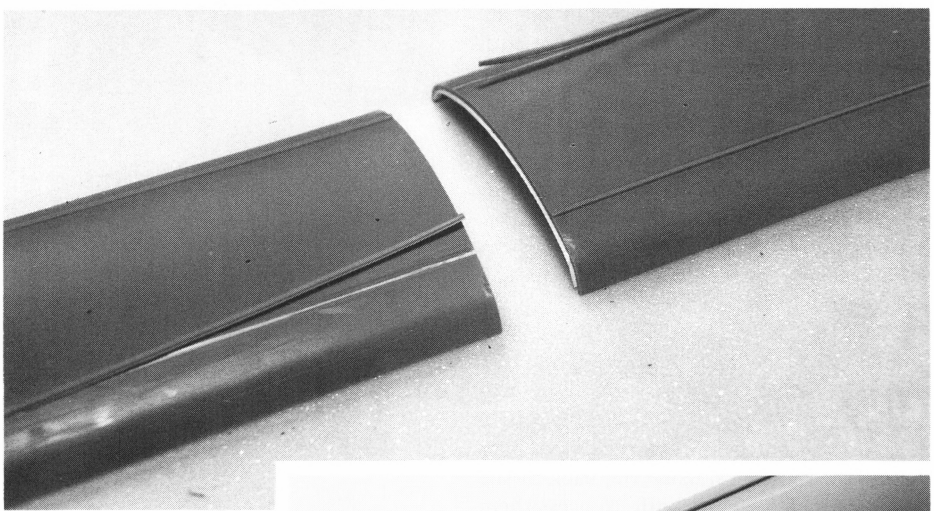
After carefully scraping the roof edge to remove flash, I found that the moulded roof – still in two parts at this stage – fitted perfectly behind these new mouldings and sat down on the carriage side exactly as designed. It turned out to be a snug fit and its natural springiness is such that it presses outwards against the back of the cantrail mouldings, so I reckon it will not need any more anchoring, but, just in case, I left the end handrails over-long so that when finally bent into shape, they can be located into the pre-drilled fixing holes on top of the roof (as provided in the kit) but not cemented. Care in bending is all that is needed to give just enough tension in the wire to allow it to be sprung into the fixing hole and hold the roof in place as well.

When the two halves of the roof were positioned on the carriage body, the moulded rainstrips were out of alignment by about 0.5mm. Slater's tell me that integral rainstrips were a late modification to the kit and also that they are looking at the problem, the only minor blemish in an otherwise superb moulding. It can be cured. My first thought was to carve off the rainstrip and start afresh. Also, since I was unsure as to whether I could completely hide the butt join between the two parts of the roof, I reckoned that the finished roof surface might end up looking a bit messy. I therefore resolved to canvas the roof with self-adhesive masking tape and make a fresh set of rainstrips and destination board mounting brackets. The pictures show the problem.

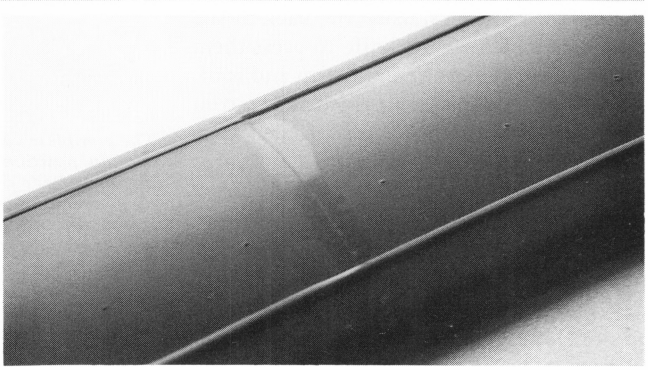
The two halves of the roof were drilled for ventilators, as is shown in the kit; then one piece was given a reinforcement strip below the butt join to make a more rigid unit (*Fig. 3*). I had to file down the top of one partition by about 0.05mm at the outer roof curve to allow for this strip, but this may not be necessary in all cases. Next, before joining the two halves, the destination board brackets were removed with a craft knife (don't forget to measure and note their position for subsequent reinstatement) and I examined the rainstrips, still with the roof in two pieces. In the event, I found that if I care-



Both roof halves positioned between the added cantrail mouldings and showing the slight misalignment between the rainstrips.



The two roof-halves with the rainstrips parted from the roof itself for a few inches prior to refixing. Note also the reinforcement strip below the right-hand half of the roof.



The two halves of the roof joined together and the rainstrips refixed into a proper alignment.

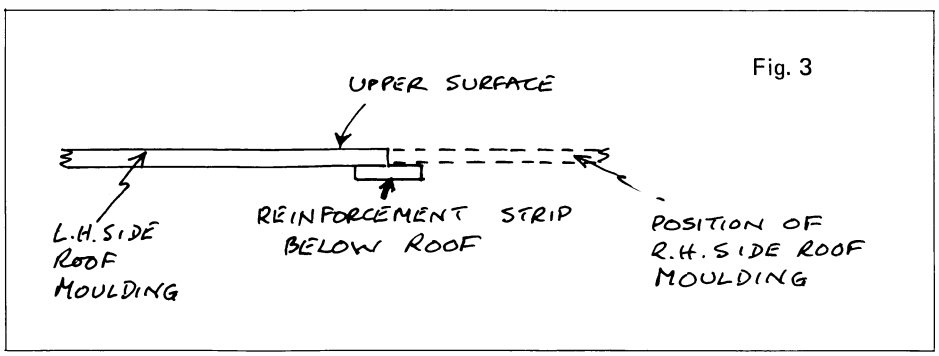
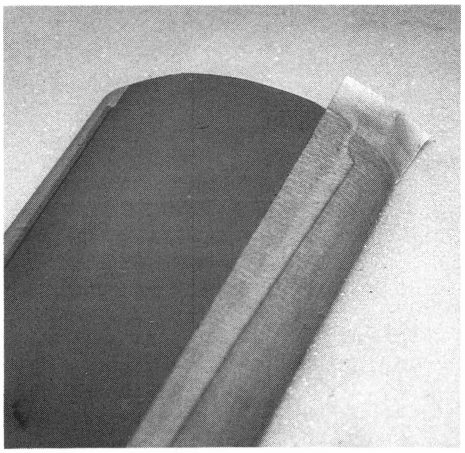
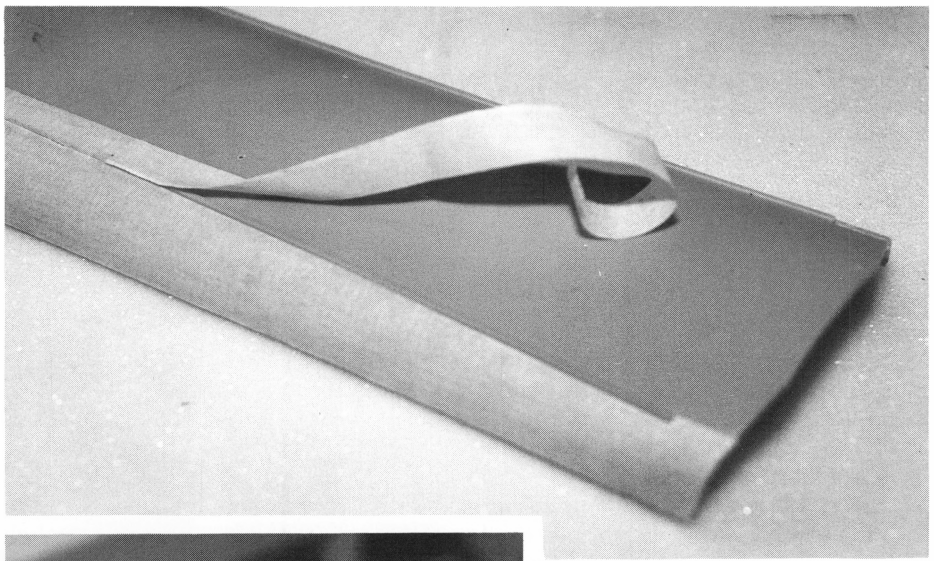


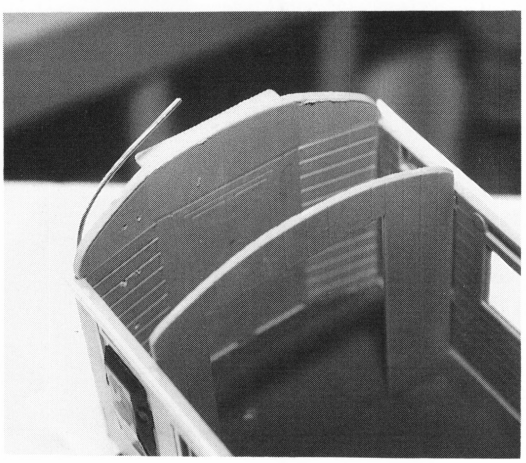
Fig. 3



Self-adhesive masking tape applied to the roof below the rainstrips prior to cutting back to shape – note that the tape is pressed into the angle between the rainstrip and lower roof and is cut sufficiently long as to overlap the end of the roof itself.



Masking tape in the process of being cut back above the rainstrip.

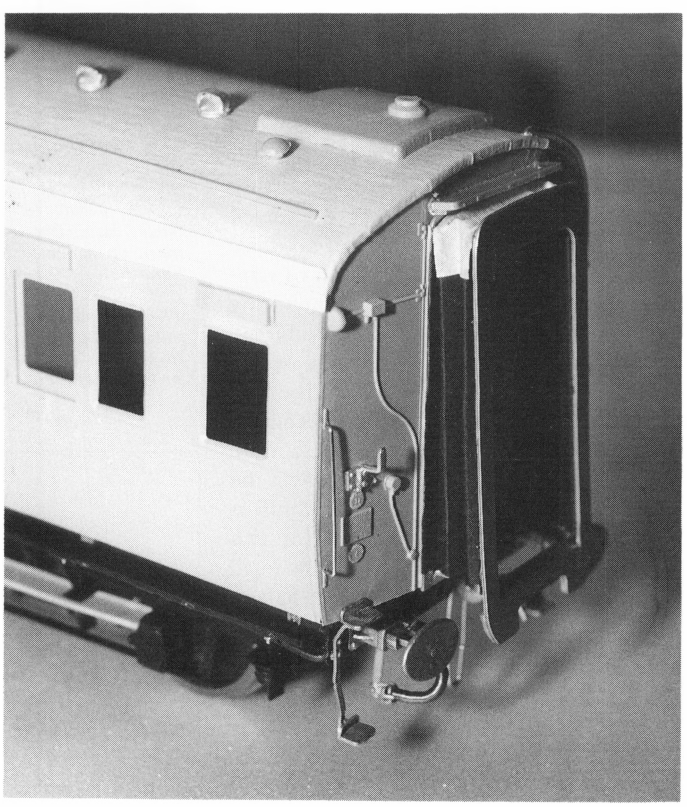


The brake end of the model, showing the free upper end of the outer end handrail prior to being bent to shape in order to hold the roof in position.

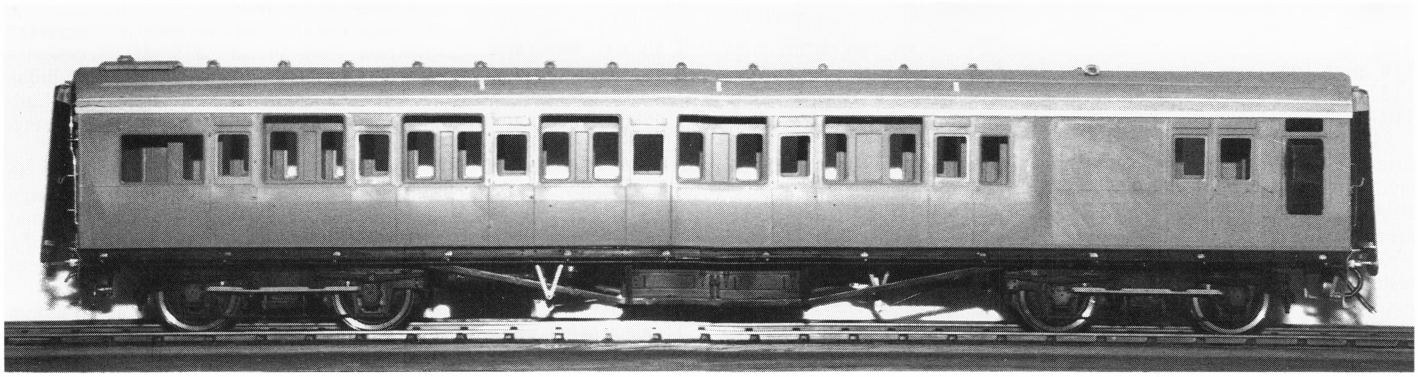
fully sliced off about 3-4 inches on the left-hand side of the butt join on both sides, to a point just outboard of the outer destination board bracket position, but left it attached to the roof (see pictures), it was possible to re-fix the free end back to the roof in proper alignment after the two halves were fixed together. Failing that, it is no great problem to cut a replacement piece of 0.040in strip as a substitute.

The two halves of the roof are now joined together and, after re-fixing the severed rainstrip, the masking tape was added in three pieces – one broad strip down the centre and two narrow ones below the rainstrips, using the back of the blade of a sharp craft knife to press them into the angle between rainstrip and roof, then the business side of the blade to trim them back to shape. I also folded tape round the roof ends and hope the photos make things clear. I had tried this trick before, so I had no fears that it wouldn't work – use 2in masking tape and take care.

At this point, open out the pre-drilled fixing holes below the roof canvas, add detail as usual and, in the case of the destination board brackets, if you have not managed to save the originals, it is simple to make new ones from bits of plastic sprue or whatever is on hand. I reckon that my roof and cantrail modifications added about two hours to the whole process and all that remains now is to add the various bits and pieces which have been left to the end as suggested – gangways, corner steps, etc. In the event, I decided not to fit the gangway rams, mainly to permit a bit more gang-



The complete canvassed roof in position, showing the effect of wrapping the masking tape round the outer end of the roof. The far side handrail is simply sprung into position into a pre-drilled hole in the roof top (both ends of the carriage are alike) and serves to hold the roof firmly in place without the need for any permanent form of fixing. Close examination of this picture suggests that an even better effect could be achieved by carving away the moulded plastic train alarm pipework from the carriage end and replacing it with genuine fine wire components.

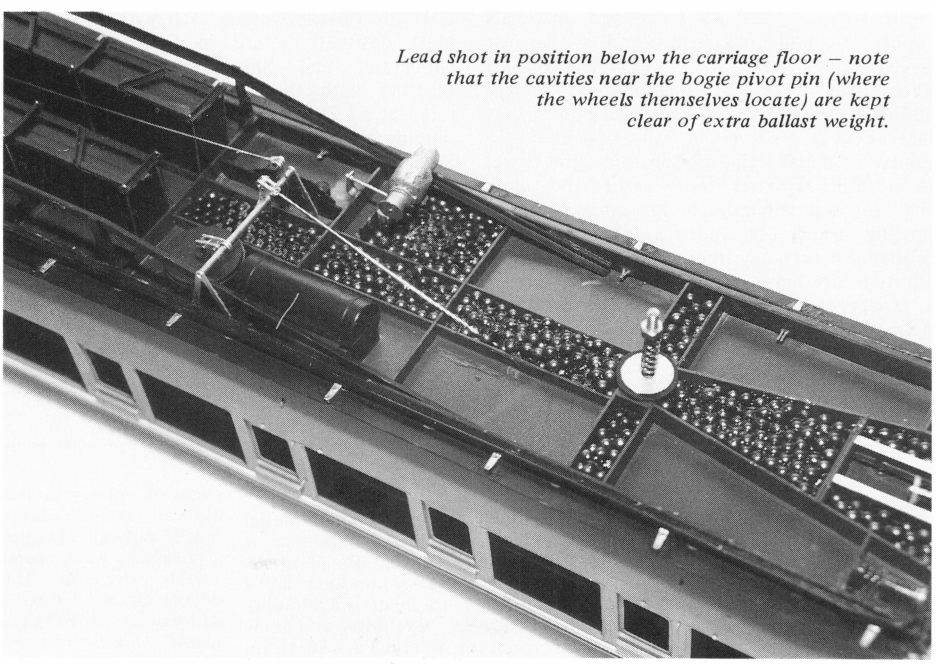


The near-finished carriage from the corridor side. Note that the interior corridor handrails and glazing will not be fitted until after painting. It will be seen that the ends of the gangways are not vertical because they are unrestrained at the lower edge. The kit provides such restraint but I decided to leave them free so as to give a bit more movement between the gangways of this and its adjacent vehicles.

way movement on my sharp curves. To get it to this stage (including modifications) took well under 25 bench hours, start to finish – very satisfactory indeed.

CONCLUSIONS

It should be apparent that I rate this offering from Slater's very highly and reckon it is probably the finest 7mm scale carriage kit I have ever encountered. At about £120 retail (depending on bogie type and, of course, subject to any future changes) it's not cheap and it does not need an Einstein to work out what a complete train might cost. But in my case it is real value-for-money if I consider the time-saving factor. I reckon to be able to scratchbuild three carriages for the same financial outlay as this kit (mostly by way of buying-in detailed castings for bogies, wheels, roof detail components, etc.), but I doubt if I could scratchbuild three in the same amount of time with the same degree of absolute detail. Neither can it be said that the kit is overly difficult. Indeed, where it scores is that there is no reason for anyone who has laid out the first cost to be worried about their ability to produce a finished model which will satisfy. There are areas where more experienced modellers may wish to make changes based on their special needs, as I did, but this is optional and a relative newcomer should be able to make a reasonable fist of things. A useful spin-off from kits like this is that the manufacturer is able to supply various bits and pieces separately, and I can see many uses for a host of detail parts. The complete bogie will obviously appeal to Southern modellers, while the neat gangway arrangement is applicable to any stock which had that type (e.g. Pullman and LNER) and will save time and tedium for the scratchbuilder.



Lead shot in position below the carriage floor – note that the cavities near the bogie pivot pin (where the wheels themselves locate) are kept clear of extra ballast weight.

I mentioned above that as I progressed, it seemed to me that the finished carriage would be a bit lighter in weight than most of my comparable stock. My scratchbuilt carriages normally weigh-in at about 20 oz for a typical 57-60ft corridor, give or take a few ounces for shorter or longer stock, and this poses no problem. When I put the fully assembled Slater's model on the scale, it only came to 12 oz, which I reckoned was a bit too light. I measured out about 4 oz of fine lead shot (from the local gunsmith or fishing tackle shop) and, with the carriage upside down, carefully placed it in as many spaces as necessary below the floor, held in place by UHU, which should be dribbled onto the shot and then left for 24 hours to set hard.

Pre-painting trials of the completed carriage on my layout revealed two or three points which were not at all obvious at the start. Firstly, in spite of my having weakened the coupling springs as described, I found that they were still too strong. No real problem – just make them even weaker. Secondly, I discovered that the single link couplings were marginally too short, so replaced them with longer versions. Finally, I realised that the open gangway end, as provided, did run the risk of locking-up when marshalled against a conventionally gangwayed carriage, the narrower type of gangway (as used by the GWR or LMS) being prone to get itself inside the wider Pullman type of the SR carriage. The remedy was to fabricate a plain end board from the thinnest available material (0.010in Plastikard) and glue it to the outer face of the SR gangway. The photographs of the model were taken before trials were made and do not show the final modifications.

SMALL SUPPLIERS FORUM *continued from page 162*

with lost wax and whitemetal castings and costs £18 post free from Brassmasters at PO Box 1137, Sutton Coldfield, West Midlands, B76 1RG.

The quiet roads and deserted car parks so often seen on modern-image 4mm railway layouts should soon be a thing of the past. BEACON MODELS have introduced a new range of 4mm kits of modern cars and vans. We're told that they are moulded in a clear resin, are simple to assemble and, by their nature, are pre-glazed. Interiors are fully detailed and allow for the installation of driver and passenger figures. First model in the range, the '92 Escort, is in production and is available (post only) from Beacon Models, 39 Leighton Close, Great Barr, Birmingham, B43 7HY. Price: £3.50 post free.

JOHN K. FLACK, tools and materials supplier to modelmakers near and far, has just issued a new catalogue – unbelievably, his 27th. Even more surprising is that he's still adding new lines to his stock and now carries just about every type of miniature and sub-miniature metal strip, section, tube, rod, wire, sheet, drill, tap, nut, bolt, washer and screw that any scratchbuilder or kit enhancer could possibly want, plus quite a few items they probably never knew they wanted. Among new additions are brass strip that is 0.4mm wide by a variety of thicknesses, L-section strip 0.8 x 0.8mm and 1/32in and 3/64in outside diameter brass tube. John also sells Cobex and clear acrylic sheet and rod, veneer and basswood sheet and strip, masses of styrene sheet and sections – including a range of newly-introduced half-round strip – plus tools, blades and quite a number of ready-made detail parts and components. At a cost of just five first-class stamps, you really shouldn't be without this list. John K. Flack is at 1 Meadow Bank, Kilmington, Nr. Axminster, Devon.

SOUTH WALES TRANSFERS has produced a range of waterslide transfers in 4mm scale for use on BR(WR) Toad goods brake vans and DMUs. The 'Restricted User' panels for BR(WR) Toads come in a range of 15 place names all in South Wales covering an area from Whitland in the west to Severn Tunnel Junction in the east. There is also a separate 'Not in Common Use' panel. Printed white on a black background, they retail at 80p a pair. There are also two DMU destination blinds each with nine lines. Most destinations are in South Wales but Gloucester and Shrewsbury are included together with the ubiquitous Special. They retail at £1.25 a sheet. Full list is available by sending SAE to South Wales Transfers, 62 Squires Gate, Rogerstone, Newport, South Wales, NP1 0BQ.

PENS AND ACRYLICS

New lining pens and inks recently submitted for evaluation from Freestone Model Accessories may be of interest to modellers who find lining and lettering of models difficult using traditional methods, i.e. bow pens, brushes, etc. *(writes JOHN HAYES).*

The pens are made by Mecanorma in France and the colours from Royal Sovereign under the brand name Magic Colour Liquid Acrylics. For our purposes, the inks consist of a range of semi-translucent and fluorescent colours.

The inks were tried in 0.10mm and 0.25mm pens and no problems were encountered with ink flow or drying in the pen, even after several weeks without use. This bears out the claim by Freestone that they have had a pen on test for over a year with no problems.

The pens are very easy to use and, being water-based, any mistakes are easily corrected. They were tried on enamel and cellulose surfaces with equal success.

Once dry, the inks are water resistant and quite durable, a coat of varnish being necessary for lasting protection.

My only reservation is the opacity of the colour which is not as strong as traditional lining with enamels. Having said that, their ease of use makes them an attractive option and well worth trying.

Colours are available in 28ml jars at £3.00 each. The pens are available in sizes 0.01mm–2mm at £13.00 each. For more information contact Freestone Model Accessories, 28 Newland Mill, Witney, Oxon, OX8 6HH. Tel: 01993 775979.

Misc.

PENDON OPEN WEEKDAYS

Pendon Museum has announced a weekday opening this summer. Last year's trial was so successful that the museum will be open from 2.00 p.m. to 5.00 p.m. on Wednesdays during July and August in addition to its normal opening on Saturday and Sunday (also 2.00 p.m. – 5.00 p.m.). On Bank Holiday weekends the museum opens at 11.00 a.m. Pendon is located in Long Wittenham, 3 miles north-east of Didcot. The current special attraction at the museum is an exhibit about the construction and operation of the Wantage Tramway.

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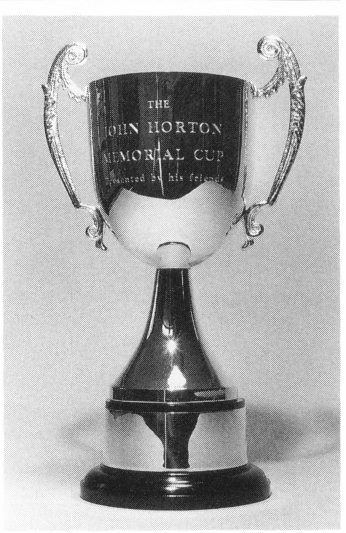


Robinson 'K' 2–8–0 or LNER O/4

or indeed ROD 2–8–0

With a GWR 2–8–0 locomotive already the favourite with operators at Pendon Museum, GUY WILLIAMS sets out to build another 4mm/EM model using the same wheel arrangement:

It has been my intention for some time to make a model of an ROD 2–8–0 using the same basic principles as the very successful GWR '2800' class 2–8–0 which we have been using at Pendon Museum for a good many years. That model had several alterations to its motor and chassis before we arrived at the present satisfactory state. Being generally reliable, smooth in operation and very powerful, it is now the favourite of most drivers at the museum. The motor, now a large Portescap, 16mm diameter, is in the tender and drives the rear axle of the engine through universal joints, under the footplate, to a 40:1 worm and wheel set. Portescap motors cannot normally be used with worm drive because the bearings are not designed to take end loads. The end thrust on a worm is quite considerable and it is good policy to make sure that the shaft carrying a worm has good thrust bearings of some sort. In 7mm scale work, I gather that ball races are quite normal. The Pendon '2800' has no suspension of any sort and most of the wheels probably touch the rails from time to time, and each one has a light wiping contact collector. Moreover, the chassis and boiler are filled with lead and Cerrobend (low melting point alloy) so that the contact with the track is pretty firm, which is a prime requirement for an engine which has to haul an impressive train. It has in its time hauled well over a hundred wagons.

Now the Robinson 2–8–0 was to use the same ideas but now in 1997 some of the more modern ideas must be incorporated. Not all of the newer developments appeal to me but I am receptive to what looks useful and does not require me to entirely change my building style.

I was persuaded to incorporate springing (probably easier than compensation in a 2–8–0 in any case) and I wanted to try the Exactoscale universal drive system using ball and socket joints with a Neoprene tubing sleeve over it to transmit the power. I had previously used metal pins in the '2800'. They are a little noisy and wore until they became terribly sloppy, but they never seemed to go beyond a certain amount and have lasted well.

I will admit to feeling a little uneasy about the Exacto idea but in use it has proved very good so far; whether it will last for thirty years or so remains to be seen, but the tubing is easy to replace.

I looked very carefully at the Exacto springing system and I liked the very neat little bearings which ran nicely on the axles. I also liked the way they were retained in the guides with the thin facing piece on the front of the bearing. This is very well-machined and fits a small raised rim so that to solder this in place is very simple. My favourite method of using the coupling rods to set the wheel bearings exactly in the right place is not quite so straightforward. The guides for the bearings have an adjusting screw in the top, the holes for which need to be tapped for the screw. As this requires that access to the top of the bearing guide is available, the frames must be thin – about scale thickness, say .015in. The etched kits use this sort of thickness, so one need not be apprehensive, and nickel is much stiffer than brass. The main problem is that the use of extended axle type jigs engaging in the coupling rods to locate the axle holes requires that there is some room for adjustment fore and aft.

To accommodate this, I made some horseshoe-shaped guides to enclose the bearing guides and made the cut-outs in the frames just a little wider than the Exacto bearing guides. These needed to be soldered, together with the horseshoes, the thickness of the frames back from the front. I solved this problem by finding some insulating Paxolin-type material (from the local radio shop) of the paper sort which will split to the thickness you need. I cut an oblong for the bearing guide to fit into, and soldered the outer horseshoe to this. Eight of these were required.

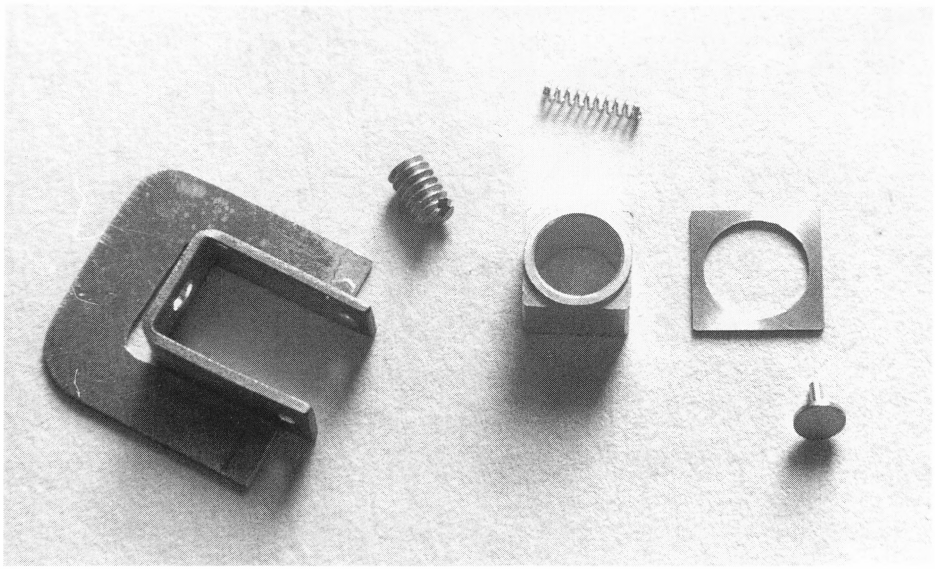
Having decided what needed to be done differently from usual for this

model, I had to set about doing some actual construction. I always like to have the coupling rods to use as a jig to ensure that the axles and their bearings coincide, but these were not quite straightforward. Mr. Robinson, the designer, had been apprenticed to Swindon Works (GWR), but he certainly had ideas of his own and his engines had several features not found on the Swindon product. He favoured fluted rods and these engines had marine-type ends to the connecting rods (the ones that go to the pistons). As I have been using etched rods made in two or three layers in the etched kits I have been making lately, I decided to commission Malcolm Mitchell to produce a set for this model in nickel silver.

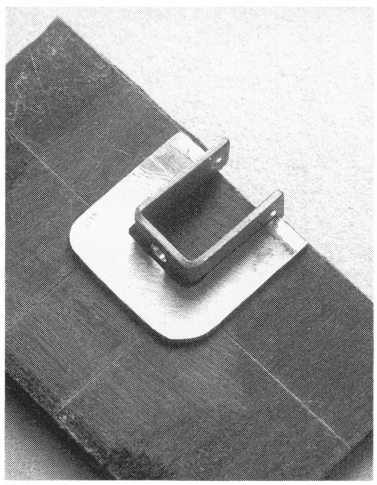
For the tender, I used a Perseverance kit, in etched brass, etc., which I had bought some time ago for a projected GWR 'Aberdare' 2–6–0 model. These tender kits, which are still available from Puffers of York, provide for several varieties of this basic design and are very good apart from the tender axleboxes, but more of that later. I intended putting a large Portescap motor in the tender, as in the Pendon '2800', so I set about assembly.

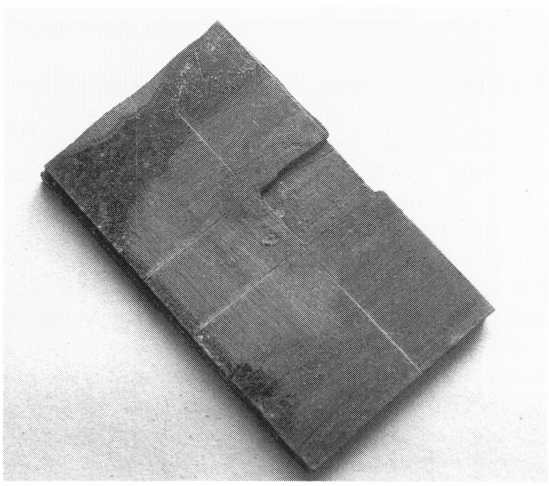
The kit went together well, but I had to make up some brackets to take the strap which holds the motor in the correct alignment to get the shaft under the footplate. At that stage I didn't know if the drive would take that angle and it was all a bit experimental. In the event, all was well, but there were a few moments of doubt.

It was also necessary to cut away the front tender buffer beam to leave room for the shaft, and this is illustrated. That also meant that the front fixing of the body of the tender had to have two

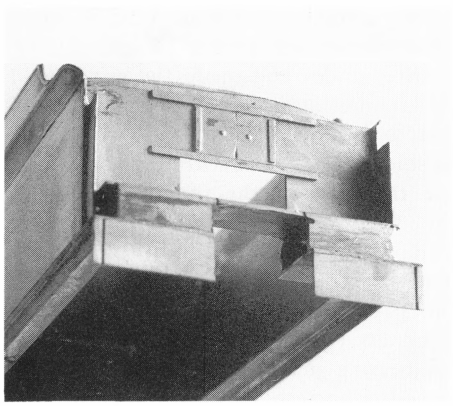


The Exactoscale spring components.

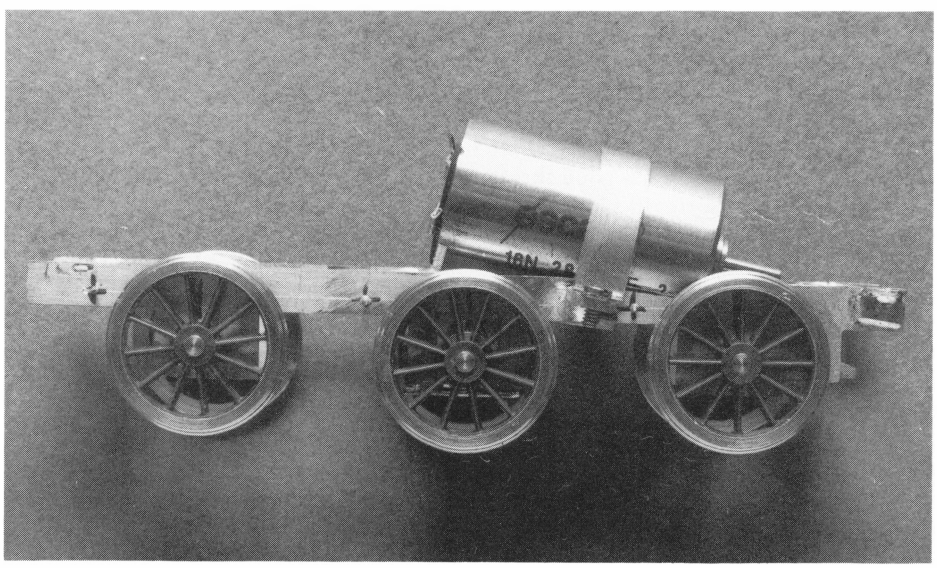




Left: *The horseshoe additions.* Right: *The soldering jig.*



Cut out for the shaft.



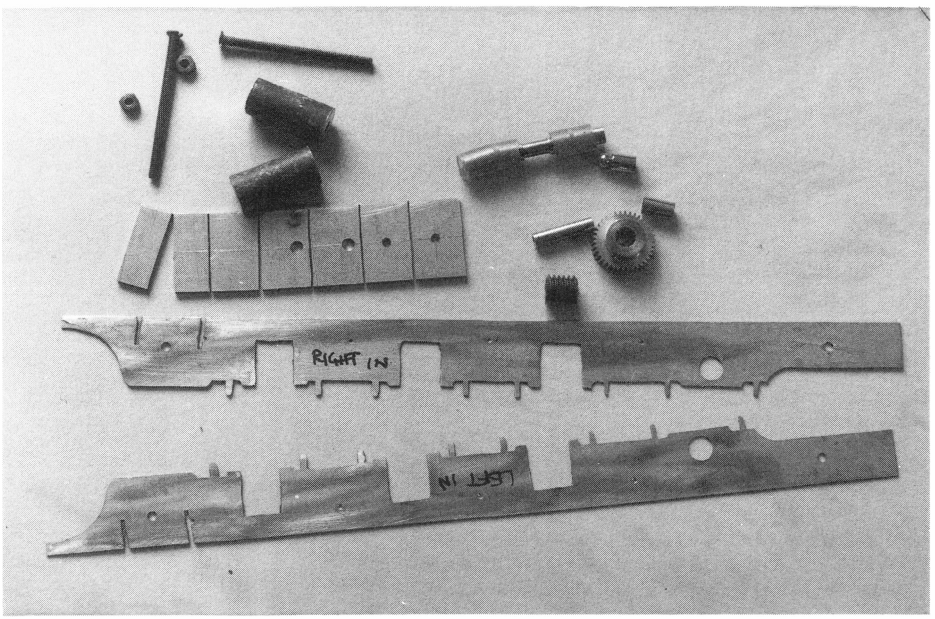
Motor mounted at best angle.

screws at the front, a bit of a nuisance. I probably could have done something different and simpler, but I didn't.

Once the tender was well under way, I made a start on the engine main frames. I had some very good drawings of the Robinson '8K' in E. M. Johnson's *Locomotives of the Great Central Railway* Vol. 2. In Vol. 1 there are some good photos of the original engines and in Vol. 2 the RODs are illustrated. I have outline drawings in Jim Russell's books and also drawings by J. N. Maskelyne and Tom Lindsay. From all this information I drew the outlines onto a double layer of .015in nickel silver.

I had already made up the rods from my etches so I could fairly accurately mark out the position of the axles. The cut-outs for the hornblock guides were made a little wider than the width of the guides themselves, so that when I used the extended axle jigs and the rods to position the axle bearings, there was enough play to get it all absolutely right. I have explained how I made the horse-shoe shaped surrounds to do this, and the system can just be seen in one of the photos of the chassis under construction. I decided to fix the rear axle which has the worm drive, so that was marked to be drilled to take a top-hat bearing. I also prepared two assembly spacers to hold the frames the right distance apart for EM gauge, and a series of 1mm thick nickel spacers to be soldered in place to make the rather thin frames really rigid. Two of these are drilled for the drive shaft, two for the bolts which hold the chassis to the body, and the two to carry the collector plates of copper-clad Paxolin are left plain.

Brake parts.



Frames, spacers, gears, shafts and assembly spacers.

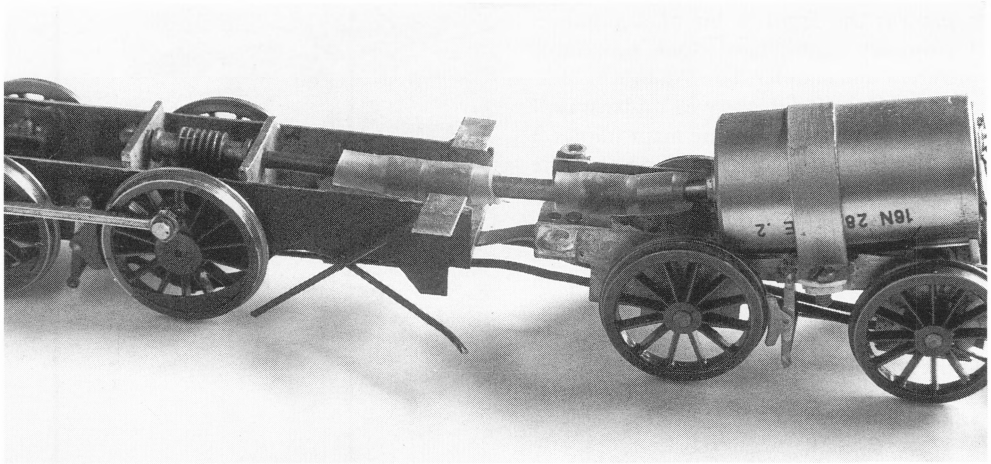
I always seem to have trouble getting the holes for the brake pivots in the right place, so I decided to make all the brakes first. The shoes were cut from Paxolin about 1/16th of an inch thick, marked out round a scratched circle on the material. I have a job to get them all the same, but the hangers are cut out and drilled in fours by having them marked out on a piece of four layers of metal soldered together, then at least four are the same. The blocks have the backs cut into with a fairly thick piercing saw blade, about 0/2, to take the hanger. This is all held together by the small pins which have had their heads reduced by holding them in a mini-drill and rotating them against a fine large file. The protruding end is chopped off and the little bit left is squashed flat. The completed brakes are then placed up against a wheel in its proper place on the frame to see just where the pivot hole must be drilled to get the brakes to hang correctly.

The slots for the cylinder stretchers are cut at the correct angle and they extend to the line of the pistons, and correspondingly the actual cylinder outlines have slots in the opposite way.

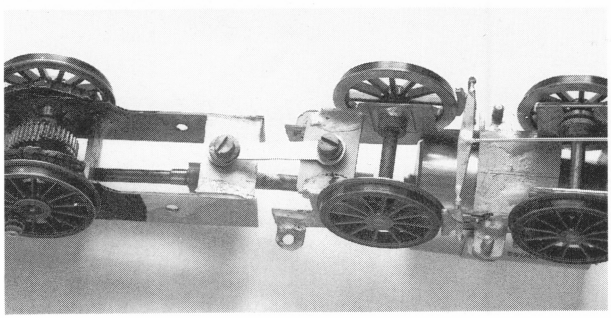
There are holes in the frames front and back for the assembly. The assembly spacers, which are removed as soon as the permanent ones are soldered in, are turned in the Unimat to a precise dimension from brass rod and have true flat faces to ensure the frames come together firmly. They are held in position with long 10BA nuts and bolts.

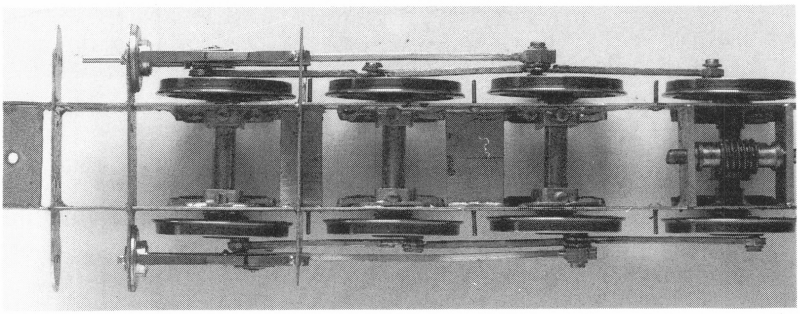
The assembly follows my standard practice except that the rear axle has the worm wheel in place, at least temporarily, and the worm is put on its shaft with thrust bearings either side. This is threaded through the holes in the special spacers and these items are adjusted (I nearly said 'fiddled about with') to get a nice fit to the gears and to have a reasonable angle to the drive. The Exacto-scale universals have a ball and socket system which is very simple, but the distance between the various bits is fairly critical though quite easy to arrive at.

You could possibly get away with just one joint between the engine and tender, but I have never tried that. To me it seems more correct to have two and to arrange the bar between engine and tender to have the bolts directly under the universals. This is shown in the photos. I tested the arrangement with power and tried it with just Neoprene tubing and it actually worked well, but later on, with the fully weighted engine and tender, there was a tendency for it to wind up, as it were, so I did it by the book which proved completely OK, very quiet and very powerful. I just hope it will last as well as the old all-metal rattle-bag in the Pendon '28XX'.

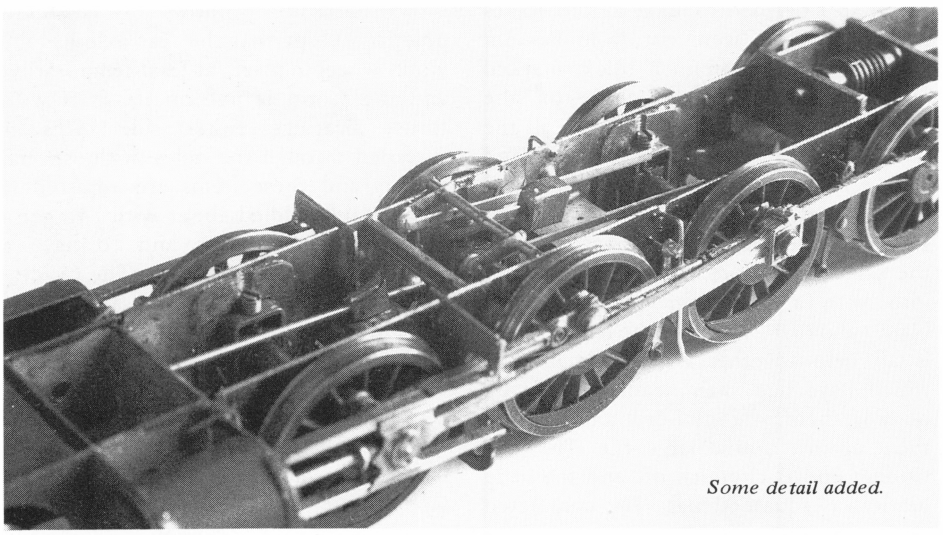


Transmission trials.

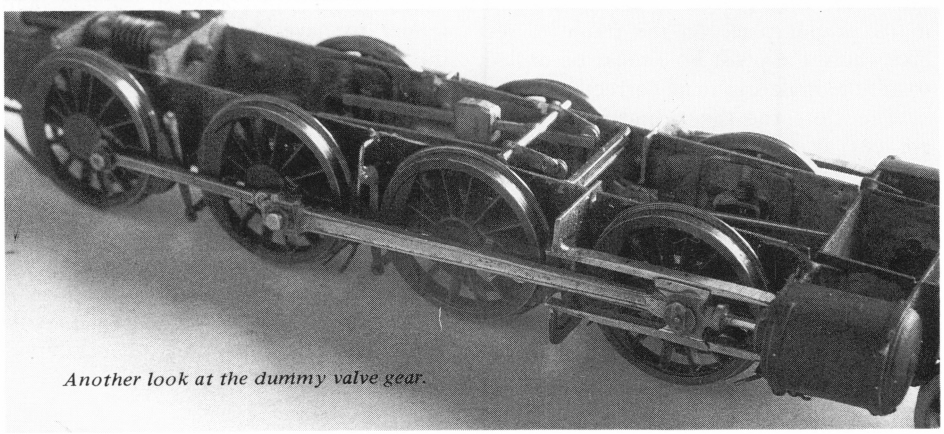




Left: *Rigid coupling between engine and tender.* Right: *Very limited clearances.*



Some detail added.



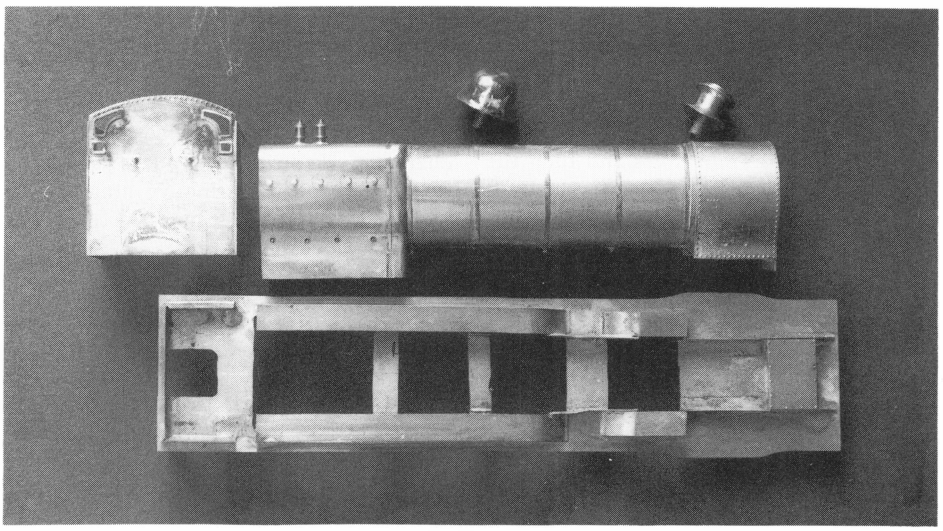
Another look at the dummy valve gear.

I made the cylinders as usual, but soon realised that these 2-8-0s have clearance problems with the two front axles when the drive is on the third one. This shows in the plan view photo. Again I 'fiddle about' until it's right, then start looking at the cosmetics. In the view of the top of the works you can see that I put in a representation of that part of the reversing gear which is visible under the rather high-pitched boiler. The fact that the model is sprung helps here as there are no compensating beams to disguise. I do not normally consider moving valve gear between the frames as I think that it is only really visible when the engine is stationary. When it's moving, an impression of something there is adequate for me. That is not to say that I don't admire the efforts some people make to do this all-moving valve gear; indeed, I have done it myself, but I don't think it really adds to the character of the model.

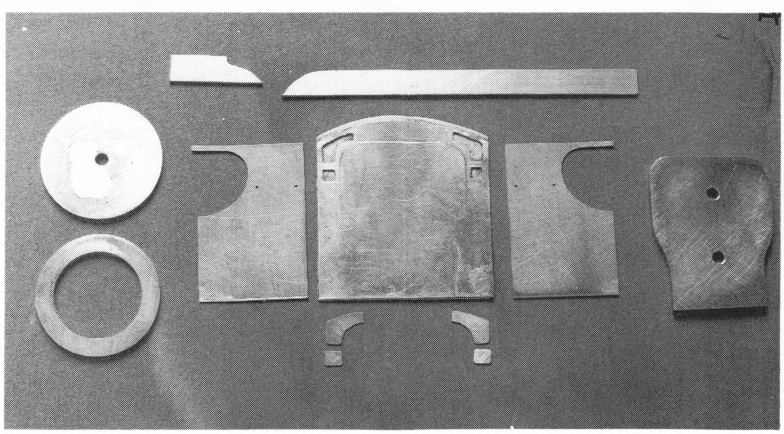
The upper works of this engine are really straightforward with the long splashers and the parallel boiler. The cab windows and the roof did call for some careful work with thin sheet metal. I have shown in the photos some of the way in which I tackled it. The thin odd-shaped frames of the windows were applied as outlines and the holes sawn and filed out to match the openings in

the cab front. The inverted 'T' section stiffeners on the roof were done with the cut-out curves, which are illustrated, with thin strips soldered either side on the finished roof. There are very fine extruded 'T' sections available, and I have some, but I felt they would be a little clumsy.

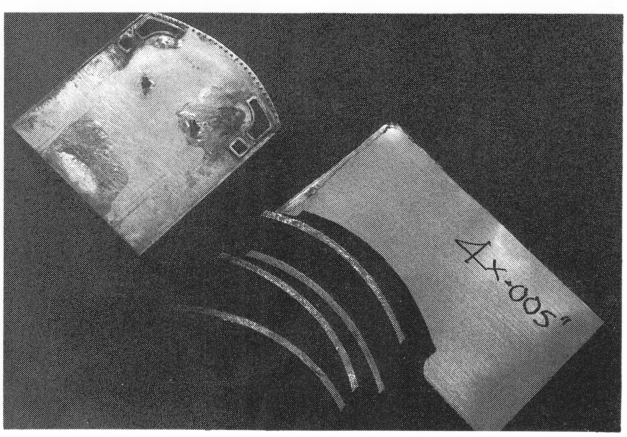
As I progressed, I had to get to grips with the detailing of the tender. It is a fairly simple vehicle really, especially as I had decided to do it in the form without water pick-up. However, the designer of the kit had made the axle-boxes and springs in a multitude of parts and left the builder to make the spring hangers and shock-absorbing pads. The central springs are longer than the outside ones, so that to cast them all would need



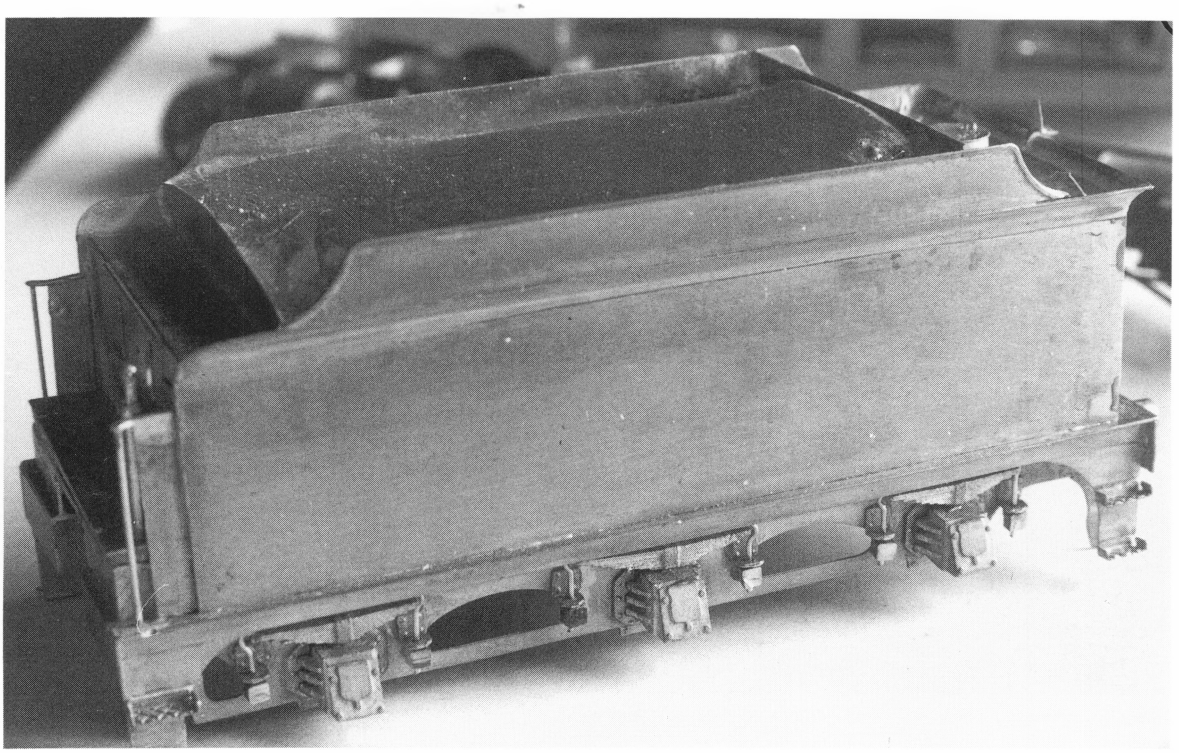
Basic body parts.



Fretted parts.



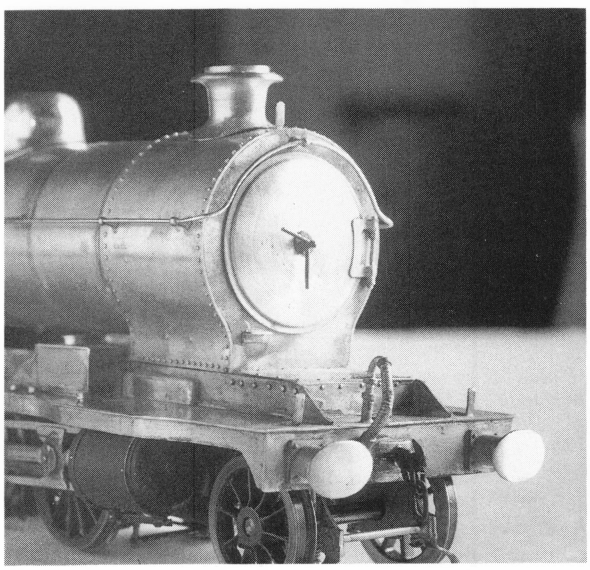
The cab detail.

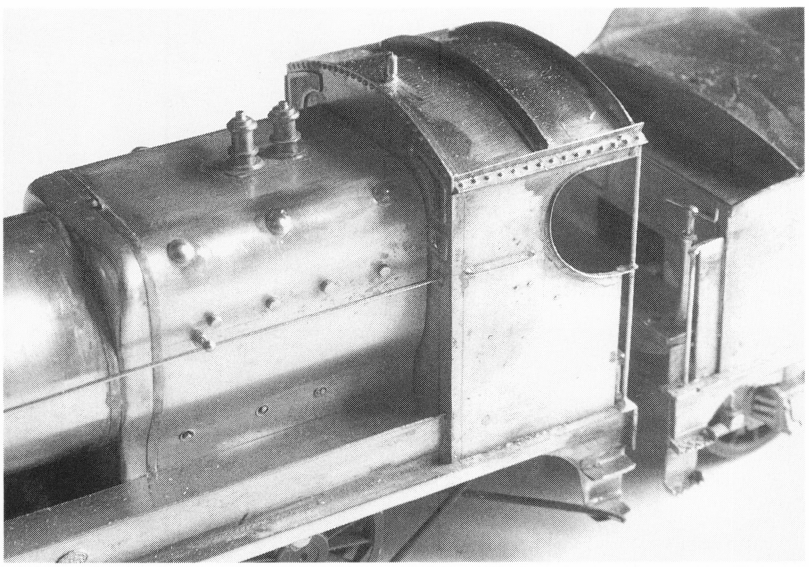


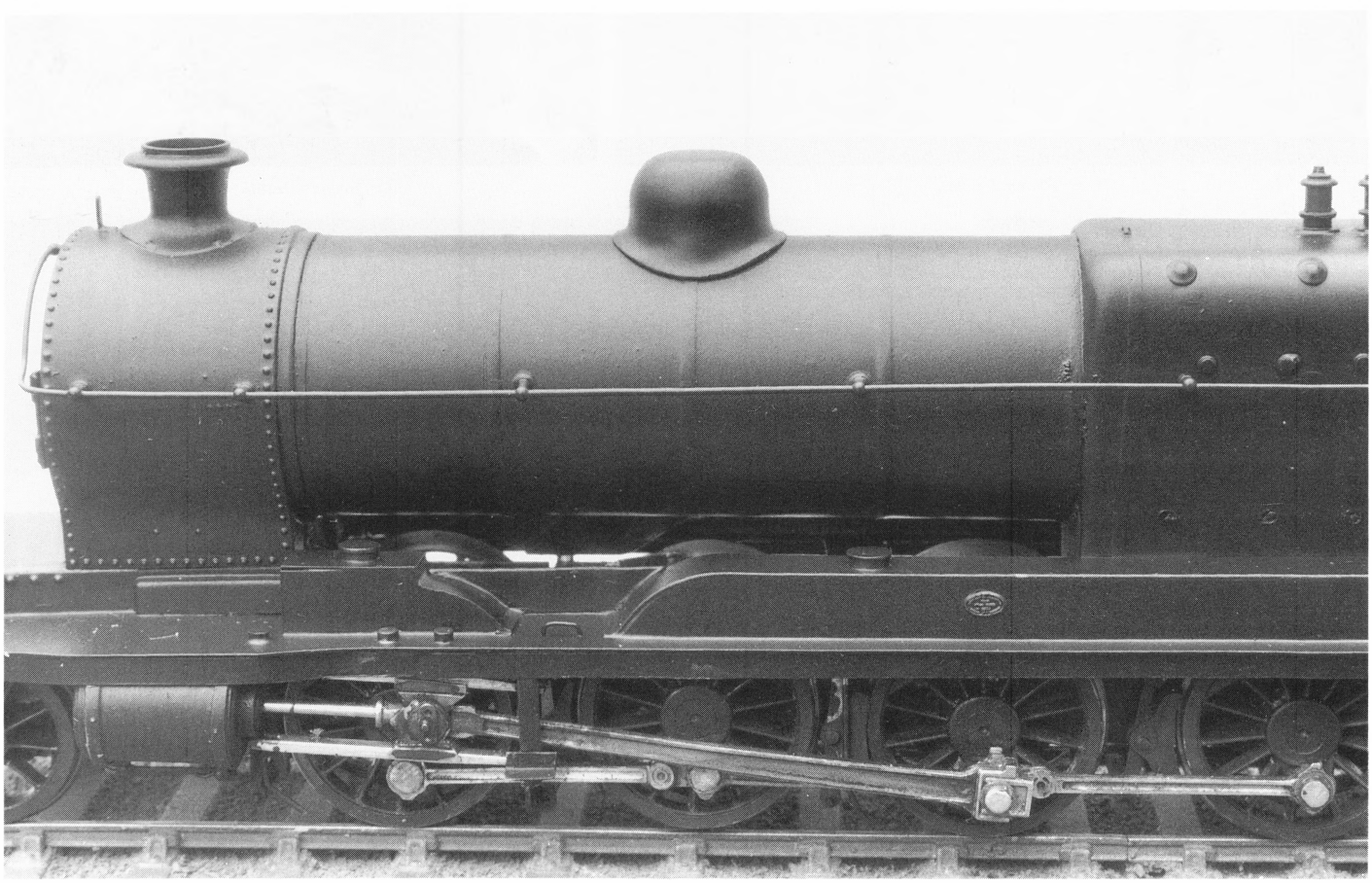
The troublesome tender axle boxes.

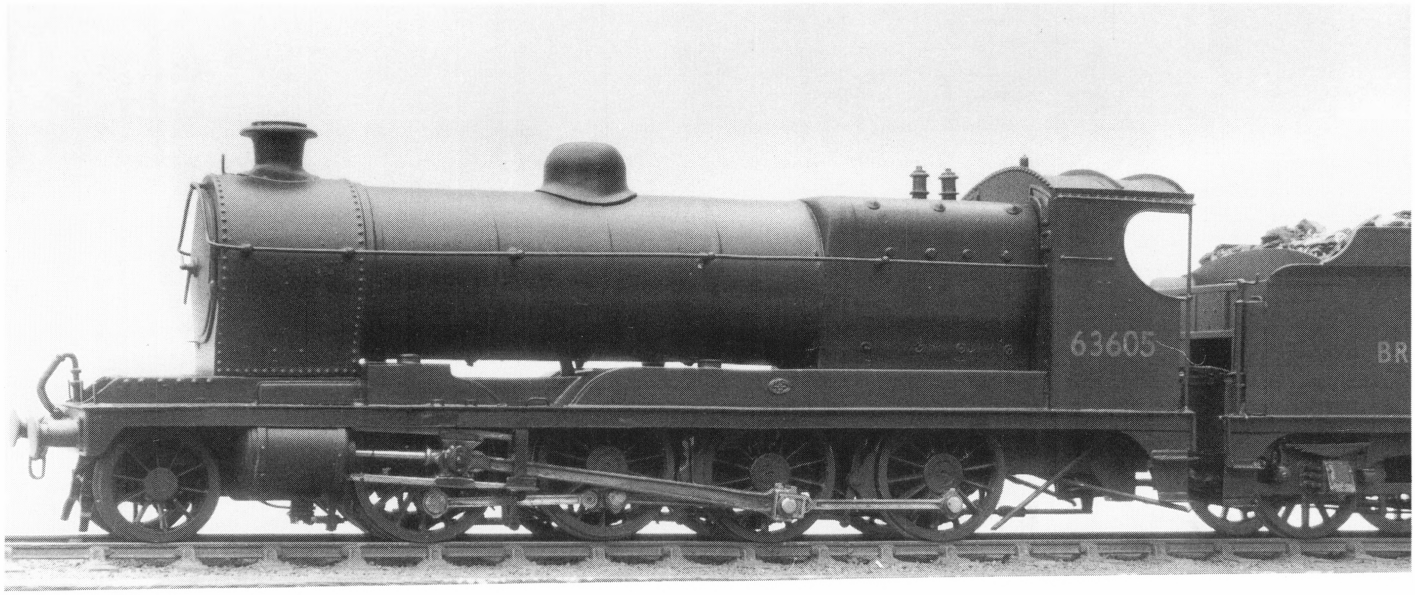
two 'masters', so I will have to seriously think of doing some for my next tenders of this type. These items are really a pain to produce, especially the little pads under the hangers, a dozen 1/16in cubes all drilled with .5mm holes and then the kinky hangers which hook over the ends of the springs. I know that mine are not all the same, but I hope the usual filth and grime in this area will help the illusion of reality.

Detailing the engine taught me how the Great Central engines got their character. From the front firstly, the door has a most distinctive hinge and a fine rim. In earlier times the dart was secured with a spoked wheel instead of the lever on this postwar engine. The chimney is a cut-down LNER thing, quite unlike the GCR one originally fitted. The dome, too, had lost its extreme shape. The GCR had a generous loading gauge and Mr. Robinson had special ideas about chimneys. I'll do one some day





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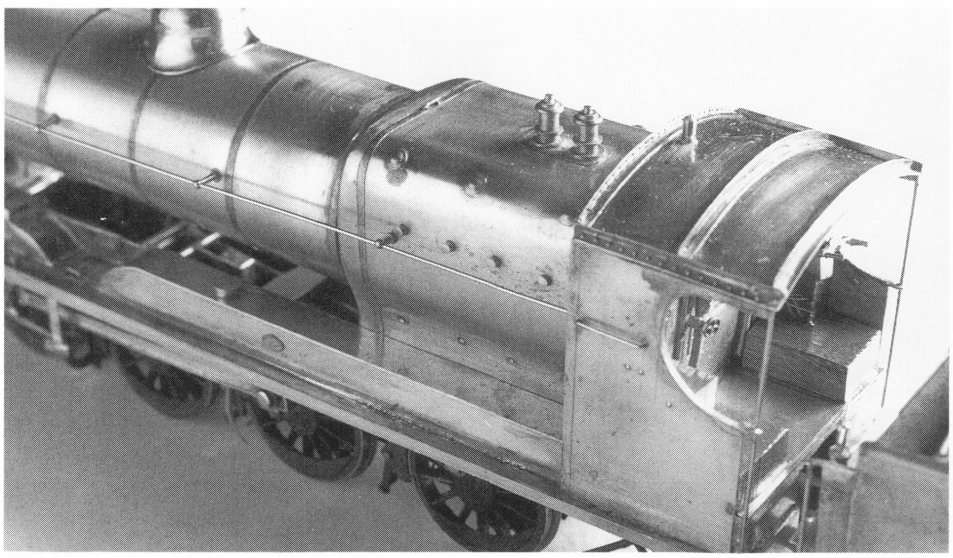

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BRITISH RAILWAYS

soon to demonstrate what I mean. The buffers, too, on this example, are oval, which could present a problem in keeping them correctly aligned, but as this is a goods engine with three-link couplings, I decided they need not be sprung (cheating again).

Moving towards the cab, we find the long simple splasher and the firebox which reveals some difference from more normal Belpaire types. The GCR covered the washout plugs with brass covers, polished in 'the good old days' but still very obvious, and the safety valves, now replaced with a standard type, were enclosed in a very distinctive housing. I have mentioned the cab windows as catching my eye at a very early stage of my study; they really set the thing down as 'Robinson'.

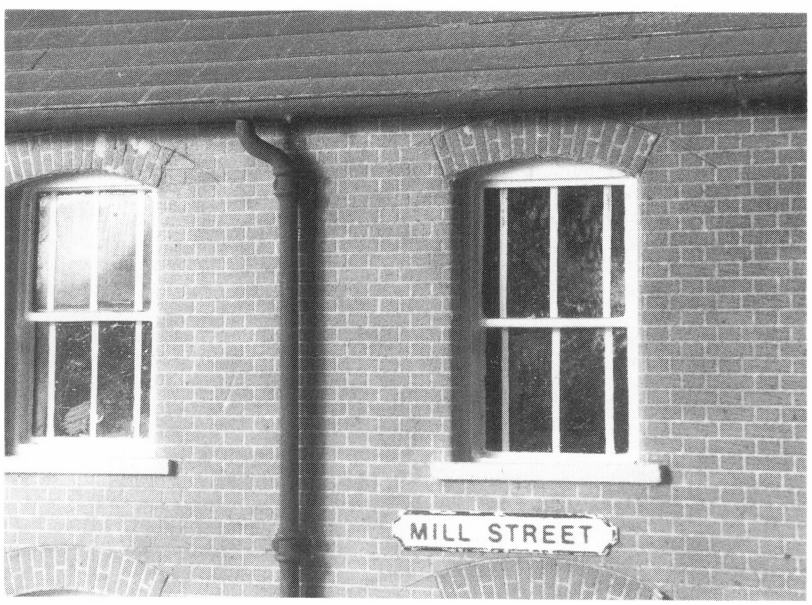
The sanding pipes from under the cab look a bit strange, as do the overflow pipes from the injectors, which are very noticeable coming out under the steps. The cab interior was modelled from a photo of an early engine so I can't be sure how accurate it is. However, the large sandboxes and screw reverse and all the little control wheels are there.

That completes the project apart from a little black paint and some subtle weathering to indicate its apparent age and use. The unusual aspects have been very interesting and have served as an introduction to Mr. Robinson's designs. I have to consider doing an 'Atlantic' before too long, but that will be from an earlier time when they were more like the way they were intended by the CME.

Exclusive!

THE GUTTER PRESS

If ever a simple modelling tool deserved a prize, this is it. Guttering is one of those apparently trivial details without which no model building can even begin to look authentic, yet it has always been difficult to make and impossible to buy – the bane of the scenic modeller's life. At last, someone – GRAHAM RAYNER, actually – has devised the answer:

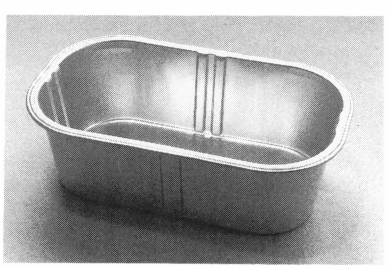


Many of the detail parts which can currently be purchased from the model trade are of high quality, and most modellers would be hard pressed to improve upon them. Take post boxes, for instance. While there are some quite poor offerings to be found, it is possible to buy beautifully-cast models with every detail needed to withstand the all-seeing eye of the camera. There is, however, a group of items which, if provided by the model trade at all, are very poorly produced. I was originally thinking of items such as buckets and other containers, whose material thickness makes them extremely difficult or prohibitively costly to produce in the sort of quantities that modellers are likely to buy. Many of these things are an almost essential part of the detailing of any layout.

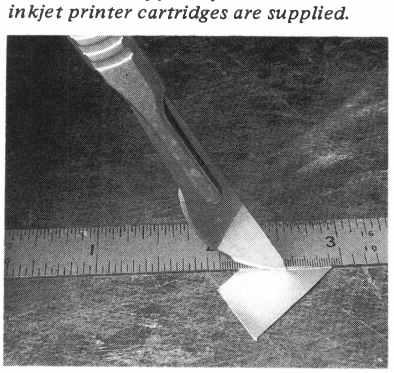
It was this lack of trade support which prompted me to investigate methods by which certain of these things could be produced more convincingly than the cast items generally on offer. It soon became clear that the best way to produce them in small quantities is to fabricate them from sheet material in the same way as the real thing.

My first attempt was to create a galvanised steel bucket which, along with other domestic and industrial containers, is detailed later. This article, however, deals mainly with the production of 4mm scale guttering, which the editor seems to believe is something of a breakthrough in scenic detailing. Before construction could begin, I had to select a suitable material from which to fabricate the parts of all of these thin-section components. It needed to be quite malleable, and needed to retain its shape well once formed. I considered using heat to shape Plastikard over a former, but at this scale I decided the plastic would be quite difficult to hold while I applied hot water; I thought annealed sheet brass would probably work quite well, but the material I eventually opted for was aluminium foil. Not the thin baking foil used for covering the Christmas turkey, or even the slightly thicker foil used by Mr. Kipling and others to support individual apple pies (although the trays used for larger pies are sometimes made of thicker material), but the even thicker – approximately 0.005in – material used by Hewlett Packard to form the small trays in which they supply replacement ink cartridges for some of their inkjet printers. Another good source is the heavyweight airtight foil seals over bulk coffee and other dry foodstuff containers – try the works canteen. This material is ideal for the purpose, having all the exact qualities of malleability but with the bonus that it is almost the same colour as new galvanised steel!

Over the years I have read many MRJ articles which have revisited the landmark layouts of the past, fondly remembered



The raw material: the foil container in which some types of Hewlett Packard inkjet printer cartridges are supplied.



The foil is rigid enough for fabrication, but can still be cut to shape quite easily with a sharp knife.

Photos: AUTHOR and ALLAN SIBLEY

for being the best and most innovative of their time. Being one of the hobby's younger practitioners, I can't share those memories – for me and many others, these are articles of discovery, a first and probably only introduction to the ground-breaking layouts which helped shape our hobby. I don't know what will be required to produce a landmark of the future, but clearly, advances in modelling techniques and the ever-increasing quantity and quality of products from the trade have brought a previously undreamt-of standard of modelling within the reach of most of us. Yet small gaps can still be found which remain unfilled.

One such gap, which occurred to me while tinkering with small scale buckets and baths, is the availability of a quick and easy way to create convincing gutters for our model buildings. There have been a number of attempts to produce guttering commercially, particularly from the makers of metal castings and plastic mouldings. Few of these offerings have been very successful simply because to make high quality castings or mouldings of such thin-walled and delicate components is simply not economically viable.

For the buildings on my 4mm layout 'Clapton West', which is set in an urban area of North London, I require no less than 400 scale feet of guttering! Clearly the filed-down-tube approach which I have previously used on various one-off buildings would be a very time-consuming option – I didn't fancy spending hours at this laborious occupation. Having turned up no practical solutions which fitted both my pocket and the time I had available, I did what I usually do in such circumstances – nothing! All my buildings were constructed without gutters or rainwater downpipes in the hope that one day I might stumble upon the solution.

It was shortly after I had completed the basic construction of the last building that I started experimenting with the foil containers used for the inkjet printer cartridges making buckets and baths. I found it easy to cut with a knife yet thick enough to retain its shape. It was just a matter of time before the grey cells did their stuff and the invention of The Gutter Press was a small step. A few doodles and the odd sleepless night later, I had produced a design for a simple forming tool which can be constructed from a handful of bits in two or three hours, but which can be used to manufacture one of the few remaining products which are essential to the architectural modeller and yet unavailable from the model trade.

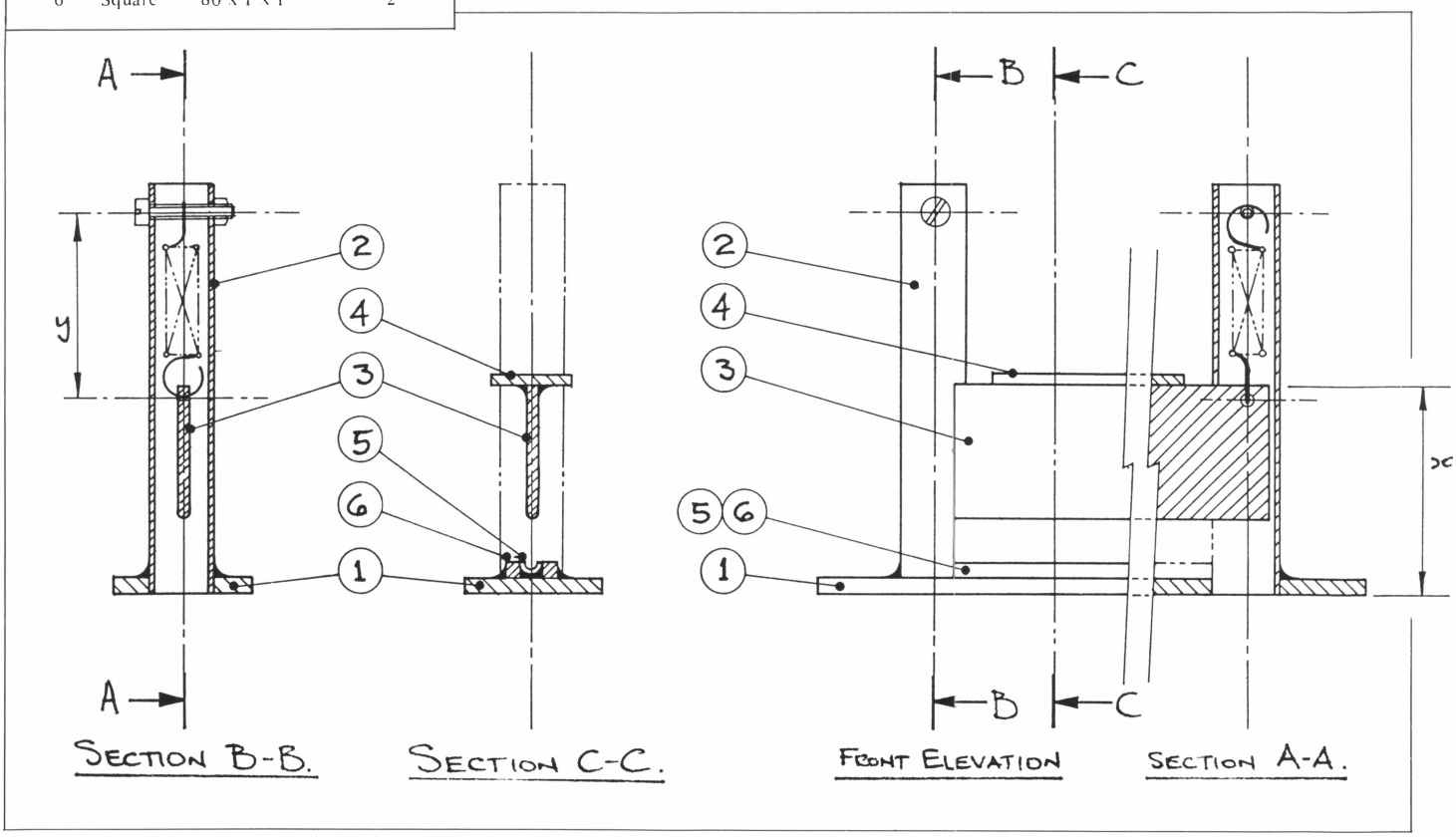
CONSTRUCTING THE PRESS

The press which I went on to build is capable of producing gutter lengths of up to 80mm. The construction process uses simple techniques which will be familiar to any builder of even the most basic brass kits. Most of the dimensions are identified in the cutting list, but the drawing and photographs should help to identify the components described in the assembly process. The part numbers (shown in square brackets) correspond with those on the cutting list and the drawing. My press was constructed entirely in brass, except, of course, for the springs. Springs can be difficult to obtain, but the ones I used cost me nothing, coming from an old record player. If you have never visited the interior of an old record or cassette player, I suggest you do so quite soon. These can be obtained for next to nothing from car boot sales if not from your own electronics graveyard and are an Aladdin's cave of useful mechanical gubbins!

Construction begins with preparation of the plain bar stock and tube sections. Firstly, cut the required pieces to the lengths shown in the cutting list, and file the ends square. Mark out and drill 6mm diameter holes in the base plate [1] 90mm between centres, for the tubular uprights [2]. The tubes should be a press fit into the holes. Mark out on each tube, the width and length of the slot in which the blade [3] will run. The width should be the same as the blade width, and the length (dimension 'X' on the sketch) is 20mm. To cut each slot, hold the tube firmly in a vice – a piece of round bar inserted onto the tube will prevent it from being crushed. A slitting disc in a mini drill can be used to make a neat tidy slot (don't forget the goggles); alternatively, a fret saw or junior hacksaw can be used. Finish the slot using a small fine file, and check that the blade will run freely in the slot. Drill a clearance hole for a 12BA screw, 3mm from the top of each tube and remove any burrs thrown up. Don't be tempted to solder the tubes in place just yet, or you won't get the blade in!

Cutting List

Part	*Section*	*Size (all in mm)*	*Quantity*
1	Rectangle	114 x 12.5 x 1.5	1
2	Tube	40 x 6 o/d	2
3	Rectangle	90 x 12.5 x 1.5	1
4	Rectangle	75 x 9 x 1	1
5	Tube	80 x 1.5 i/d	1
6	Square	80 x 1 x 1	2

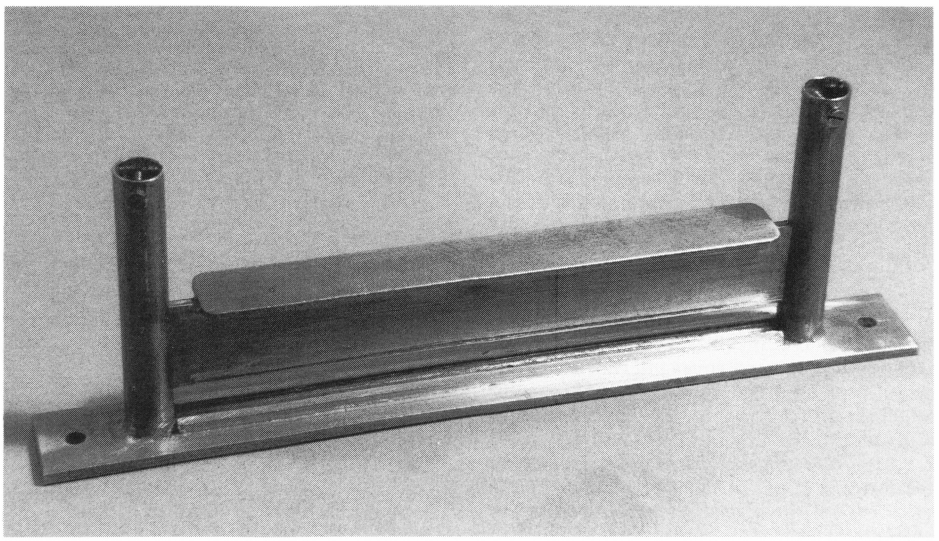


The blade [3] requires a radiused lower edge and a clearance hole in each top corner for the return spring. Mark the positions for the holes 2mm from the top edge of the blade and 2mm in from each end. Drill each to a clearance size for the chosen springs – I used a 0.5mm diameter drill. When forming the radiused lower edge of the blade, it is important that the edge remains straight through its entire length. The radius is applied using a fine file, taking care to ensure that not too much material is removed at any point along the length. Check the profile regularly. To help identify where material needs to be removed, it may be helpful to black the sides and edge of the bar using a spirit-based permanent marker pen before starting to file – this gives a clear indication of the area where no material has yet been removed. To complete the blade, solder a piece of brass strip [4] to its top edge to give a wide flat area to press on.

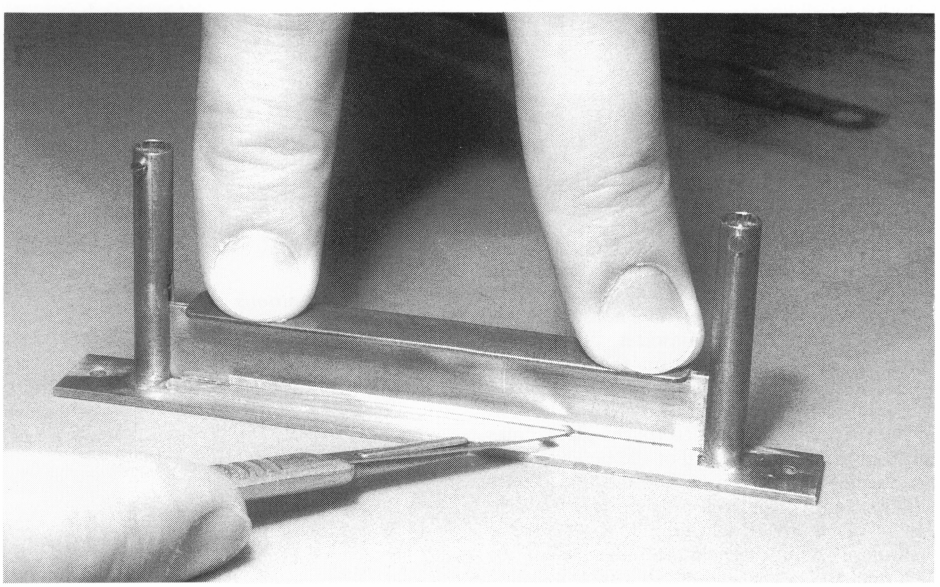
The main 'guillotine' components can now be assembled. Because of the soldered construction, it is not possible to insert the blade into the slots in the tubes once the tubes have been soldered into place. It is therefore necessary to begin by assembling the tubes and springs at each end of the blade before soldering the posts in position. Begin by threading the loop at one end of a spring through the hole drilled in the top corner of the blade [3]. Next, thread the spring into the tube [2] from the bottom and use a piece of stiff wire to catch the loop at the other end of the spring. Pull on the wire to tension the spring, and insert a 12BA screw through the clearance holes drilled near the top of the tube, passing the screw through the loop in the spring. Once the wire is withdrawn, the spring should be left under slight tension, holding the blade at the top of the slot in the tube. Repeat the process for the other end of the blade, then position the bottom ends of the tubes [2] into the holes drilled in the base [1]. Holding the tubes in position, check that the blade runs freely in both slots before soldering the tubes permanently in place.

The lower former is simply a piece of brass tube [5] filed down to a half-round section. It is not difficult to lay the tube in approximately the right alignment under the blade, but, for the press to work correctly, it needs to be perfectly aligned. The simplest way I have found to do this is to tack solder the tube (before filing) to the baseplate in its approximate position. Whilst holding the baseplate of the press in the vice, file the tube down to approximately the half-round profile required. The blade can then be depressed, and by warming the solder tacks, the lower former will gently be moved into the same alignment as the blade. I completed the press by adding a square brass strip [6] to each side of the half-round tube, then, after running a final seam of solder down each side, filing the tube to the level of the strip, giving a uniform depth to the former along its length.

There are, of course, many ways in which this design could be developed to handle larger sheet widths, different gutter diameters, etc. Indeed, the design itself is far from perfect, but it is very simple, can be constructed in an evening, and it works!



The gutter press.



Having deformed the foil in the press, a sharp knife is used to cut away the excess material on each side of the former.

MAKING AND FITTING GUTTERS

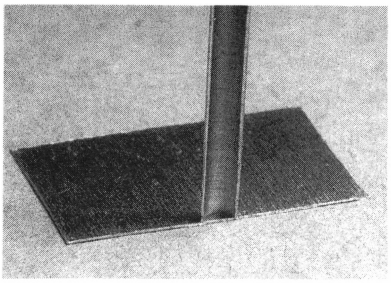
The operation of the press is simple, but before gutter manufacture can begin, the foil trays must be cut into pieces and rolled flat. With care, the base, sides and ends of the tray can all be used, wasting only the rim around the top edge of the tray. To form the gutter lengths, simply place the foil between the formers of the gutter press and press down on the blade, creating a neatly formed radius in the foil. The excess material can then be removed from each side of the gutter with a sharp knife, using the top edge of the lower former to guide the blade.

I have to say that cutting foil is among the quickest methods I know to blunt a blade, but a sharp blade *is* essential if a clean enough cut is to be made. I use a scalpel, which has blades which are very hard, but quite brittle. To ensure a sharp cutting edge, after I have made five or six cuts, I break off a short section of the blade (about 2mm in length) with a pair of pliers, to reveal a fresh section of blade at the point. This can be dangerous, as scalpel blades can shatter, so use goggles and, if in doubt, follow the editor's example and buy blades in bulk and replace them as needed.

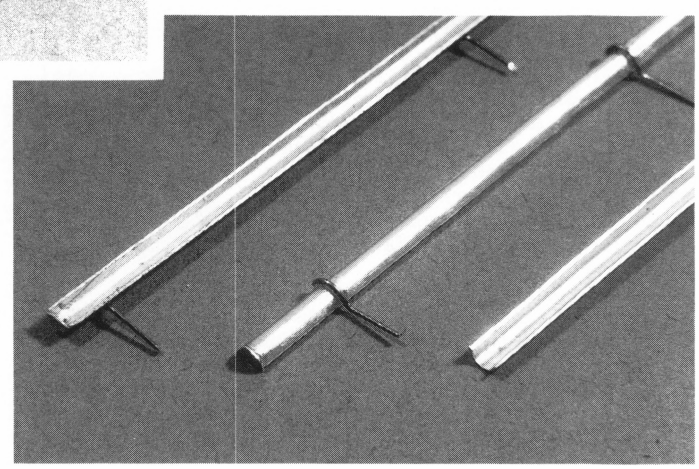
Just as with full-sized gutters, the lengths must be joined together to construct lengths which will span entire building elevations. This can be done by laying the lengths over a piece of round rod or tube of the same diameter as the gutter. Overlap the lengths by 1.5mm, then press firmly on the join with a finger and roll the tube to apply the pressure progressively around the full profile of the gutter. The tube will support the gutter lengths, keeping them in shape, but the pressure will allow the profile of the outer gutter to deform around the inner one at the overlap, to make a neat lap joint

which can then be fixed using a drop of cyano adhesive. The ends can be capped by simply placing the end of the gutter onto a flat piece of foil and again applying a drop of cyano. Once the adhesive has dried, cut away the excess foil to the half-round profile of the gutter.

Lastly, we require brackets; mine are made of 0.3mm brass wire, and can be formed round the rod which was used to form the overlaps at the gutter joins. Roll the wire halfway round the rod, then make a sharp bend with a pair of smooth-faced pliers to create a straight length of about 4mm, which will be used to support the gutter. The brackets can then be fixed, again with cyano, at equal intervals along the length of the gutter. To fit the gutters to the building, drill holes into the fascia board or walls of the building at intervals to match the brackets. The holes should be drilled as close to the lower edge of the slates or tiles as possible so that when the brackets are inserted into the holes, the gutter sits neatly below the edge of the roof covering. Do not fix permanently until painting is complete.



The ends of the gutter are capped by simply placing the end onto a flat offcut of foil and applying a drop of cyano. When it's dry, trim the foil to shape with a sharp scalpel.



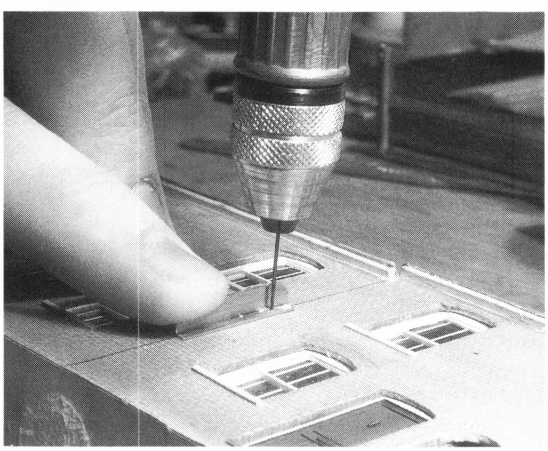
Gutter lengths, shown directly from the press and also complete with ends and brackets ready for fitting to the building.

RAINWATER DOWNPIPES

Nothing too radical here. The pipes are made from 1mm diameter brass rod, formed with a pair of smooth-faced pliers to the required shape. They are fixed to the wall using small 'staples' of 0.3mm brass wire, which are formed by wrapping the wire around a piece of 0.7mm wire to create a U-shape, and cutting to length with side-cutters. Two staples are required for each gutter bracket. Backplates are from 0.040in x 0.020in plastic card strip, cut to 3mm lengths, the ends rounded with a needle file.

Before fitting the rainwater pipes, their positions must be marked on the building – I used faint pencil lines. The lines are behind the pipes once they are fitted, and can't be seen in the shade of the pipe. To fix the pipes, holes must be drilled in the wall of the building, into which the 'staples' can be inserted. Four holes will be required for each bracket, arranged in a square formation. Positioning of these holes is critical if a uniform appearance is to be achieved, so I made up a small drilling jig using an offcut of T-section brass (see photo). To drill the holes in the building, the T-section is laid upside-down on the wall, enabling the jig to be held by the central web. The web lays on the centre line of the pipe, so can be aligned with the pencil line on the building to correctly position the jig. A mini-drill is used to make 0.3mm diameter holes in the wall, using the holes in the jig (two each side of the web) for position. Each pair of holes should have a vertical separation of 0.040in (the same width as the plastic card backplate).

Next the backplates must be fixed to the wall, using the holes for position. My buildings are made of card, but whether using card, plastic or wood, a drop of Mek-Pak applied with a brush will fix the plastic card equally well. The backplates will cover half of each hole, so once they are firmly bonded, use the mini-drill again to open out the holes. This may be more of a problem with buildings which have a plastic structure, but with a card structure, the drill (revolving quite quickly) will drift easily into the hole in the card, making an indentation in the side of the backplate.



The positions of the downpipes are marked on the building with pencil. Holes are drilled for the bracket 'staples' using a jig made from a scrap of T-section brass, to accurately locate the drill.

Assembling the rainwater pipe brackets.

Like the gutters, to enable the downpipes to be painted easily, the parts must now be assembled but not yet fixed permanently to the building. Lay the downpipes in position on the backplates, and insert the staples through the holes in the walls. Apply a tiny drop of cyano to each staple, fixing it to the pipe but being careful not to fix the pipe or the staple to the wall. To apply very small quantities of cyano, I find it best to make a puddle of the adhesive on a piece of scrap plastic or metal, then use a piece of 0.7mm diameter wire to pick up a small drop from the pool, which can then be applied directly at the required point. If one drop is insufficient, another can be added. Once all the staples have been fixed, remove both the rainwater pipes and the gutters ready for painting. Don't forget to keep them in order so that they go back in their correct positions; even items which should be identical will have slight differences.

PAINTING

I used enamels to paint both the gutters and the rainwater pipes. The backplates need to be painted carefully with a small brush, but a primer and the colour coat may be brushed or sprayed onto the items which have been removed from the building. Remember that whilst the outsides of the gutters will be coloured, the insides will appear an earthy colour due to all of the dirt and grime which has been washed from the roof, forming a layer on the inner surface of the gutter. Pipe ends may also be treated to a spot of black paint to give the illusion of an open end. Once all the paint is dry, gutters and downpipes can be refitted to the building and fixed in position with cyano, applied from the inside of the building wherever possible. Weathering is obviously best tackled once the building is complete.

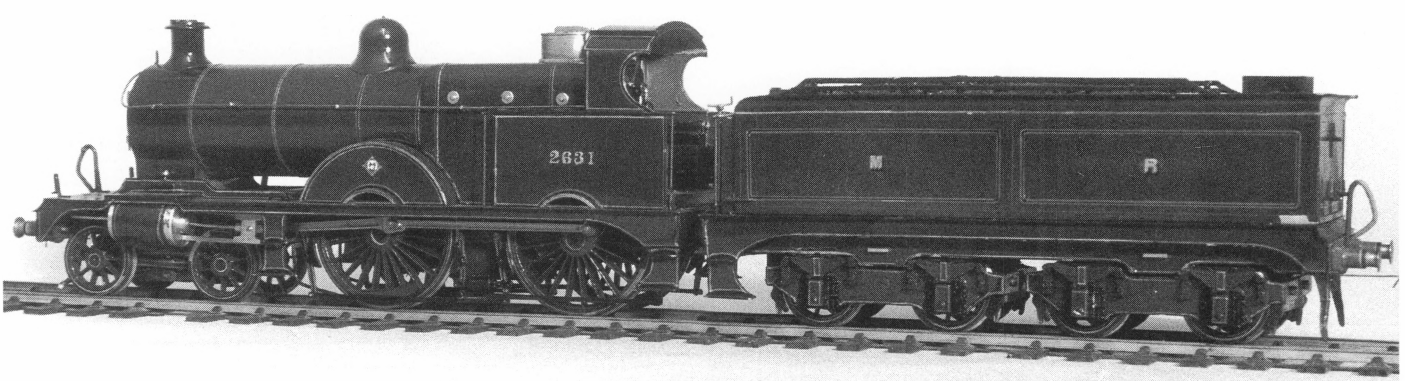
CONCLUSION

On the face of it, gutters and downpipes are trivial details. But without them buildings can look flat and lifeless, lacking the effects of shadow which are created by the projection of a roof overhanging the wall below. In short, the building simply looks wrong because it is incomplete. The gutter press may not be an engineering masterpiece, but it does perhaps offer a solution to one of the problems which architectural modellers have been struggling with for years – how to make convincing gutters without filing down tube, dismantling old umbrellas or making do with expensive and inadequate metal castings or 'solid' plastic mouldings.

The construction of scale buckets and other vessels will be dealt with in a future article.

Midland Compound No. 2631

SID STUBBS's EM model is scratchbuilt, right down to the motor.



This was the first of five compounds which were the last locomotives built by S. W. Johnson before he retired in 1903. No. 2631 came out in 1901 and employed the three-cylinder Smith design with one high-pressure inside and two low-pressure outside.

It was set to work on the Settle & Carlisle line and performed extremely well, obviating the need for double heading. It had an enormous 4500 gallon bogie tender which, when full, weighed almost as much as the engine (it was needed as water troughs did not appear on the Midland until 1903). It was renumbered by Deeley in 1907 and, being the first of the 4–4–0 compounds, it received the number 1000. It was rebuilt to Deeley's standard design compound in 1914 and, as such, No. 1000 is still in existence.

My 4mm scale/18mm gauge EM model was scratchbuilt in 1985 using my own motor in the tender and cardan shaft and worm gear, just as my Kirtley 0–6–0 already described in MRJ, the only difference being that in this model, I employed the newly-available commercial wheels with steel tyres and plastic centres. In order to transfer the current to the split insulated axles, thus avoiding collectors, I bored out the plastic boxes and pressed in brass bushes. Two thin metal strips were then soldered at 180 degrees to the tyre and the bush, slight slots being cut in both so that the strips did not protrude; the strips are hidden behind spokes so they are not seen. A full description of this method appears in MRJ No. 56.

In this case, the driving wheels and loco bogie wheels collect the current, but I decided that it was probably not worth going to the extra length of collecting via the tender wheels as I normally do on six-wheeled tenders, using plug-in leads between engine and tender chassis frames which also serve as dummy piping twixt engine and tender. There is a set of cab fittings including two reversing handles, one for the high and one for the low-pressure cylinders, and, as usual, dummy inside motion is modelled.

This is the only Midland loco I have built which has outside cylinders, and since these are carried on the frames but come perilously near to the footplate and valances, a short circuit would be nearly inevitable were the cylinders of metal. Accordingly, they are turned in Tufnol and the metal cylinder caps, which are slightly smaller in diameter, don't touch.

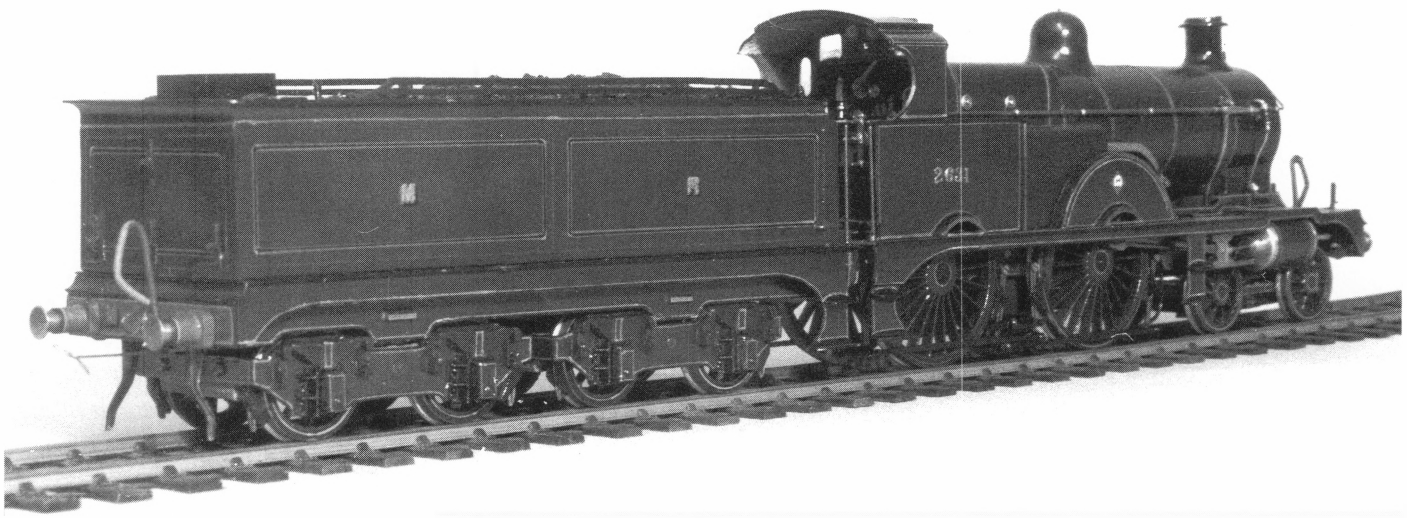
For normal Midland locos with round cab spectacles, I have made a stock of

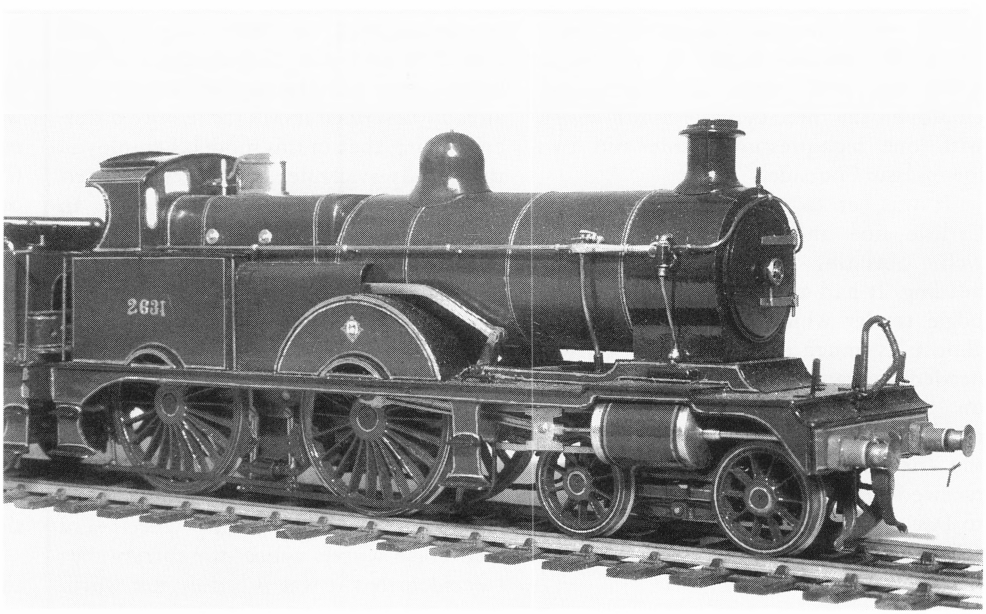
brass rims which are pressed into the spectacle plate, soldered, and a round piece of clear plastic, cut out with a suitable punch, is inserted. However, there are four spectacle glasses on this engine and they are not circular, so here I used some Micro Kristal Kleer, obtainable from model shops, which is viscous and will fill holes this size and solidify into clear 'glass'. The raised brass numerals were drawn out to scale many years ago covering all the Midland engines I intended to model and these were then photo-etched and taken out of the brass sheet as required. The cab side is lightly tinned and each number soldered in place, surplus solder being removed with a fine scraper made by grinding and stoning the end of a fine triangular needle file. The whole is then polished with a glass-fibre abrasive pencil.

Most 4—4—0 locos tend to sit down on the leading bogie with loss of tractive effort from the rear wheels, and this is, perhaps, aggravated by my putting a machined, slide-fit lead plug in the entire boiler and smokebox to gain weight, even though the bogie is sprung. To help matters, the tender sits down only on the rear bogie, the front one being moderately spring-loaded to prevent it jumping off the track, but the tender hook is supported by the eye on the locomotive buffer beam, so adding quite a bit of the tender weight, including motor with lead flywheel, to the rear end of the loco. It seems to have succeeded because, on test, the engine will start and haul 16 bogie coaches up my 1 in 80 gradient.

Painting and lining is as described in connection with my Kirtley 0—6—0 and, of course, boiler, boiler mountings and so forth, are all secured by screws and so may be detached for painting and lining. This also applies to the wheels which can all be removed as pairs on their axles. Again MRJ No. 56 goes into this latter arrangement in detail.

I have 11 Midland engines all of the 1890-1901 period and all having the same two-start worm gearbox, cardan shaft and flywheel, although the smaller tank engines built later employ Portescap type ironless rotor motors which have proved such a blessing to our hobby. I have enjoyed building the models over the years and their operation over this time has been faultless.





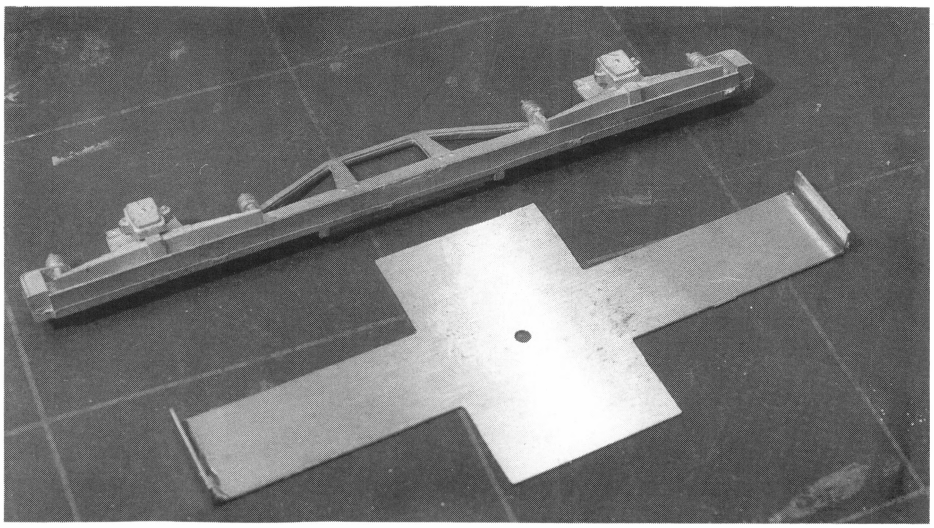
Sid Stubbs's Midland Compound No. 2631 — 12 years old and still going strong.

Photos: PHILIP HALL

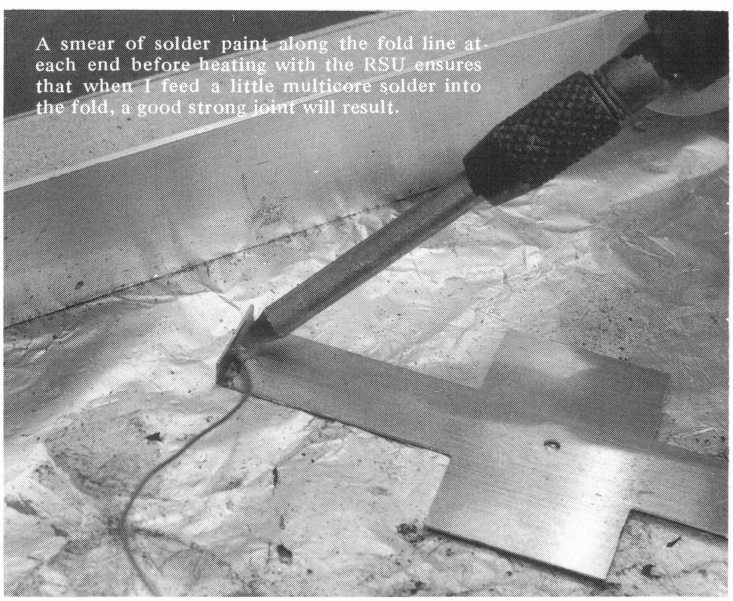
Soldering Whitemetal to Brass

by LAURIE GRIFFIN

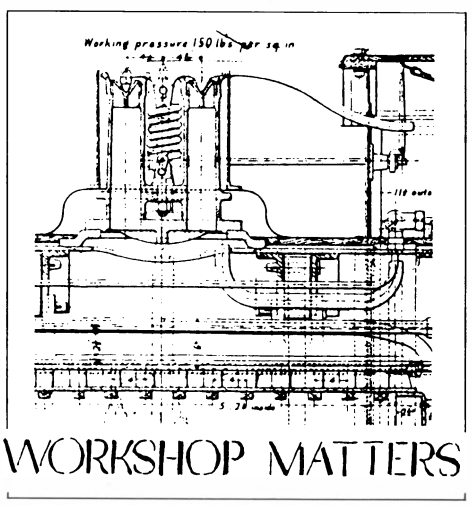
I would like to dispel a myth about resistance soldering with this article, particularly the one I tend to hear at exhibitions every so often – that you can't solder anything whitemetal with a resistance soldering unit (RSU). Well you can, and here's how:



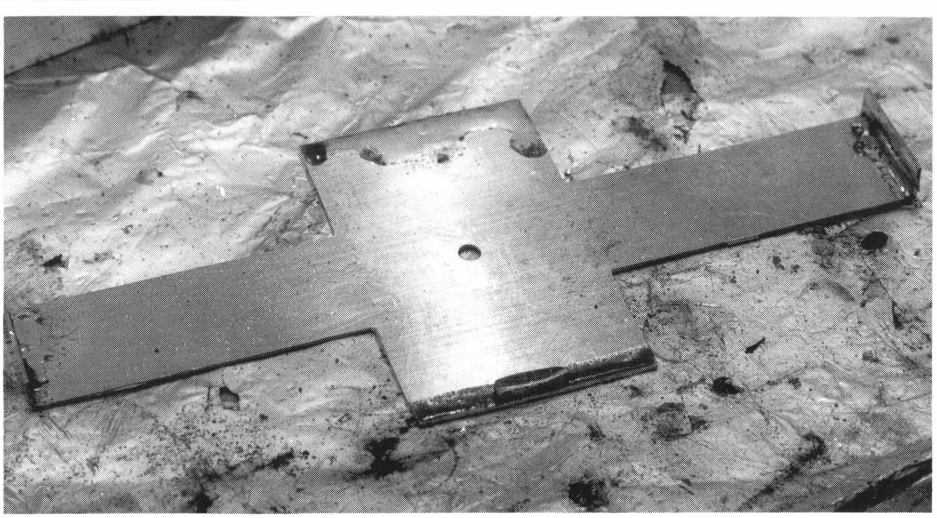
Here's a typical problem – soldering a whitemetal coach bogie side to a brass etched bolster. These are 7mm scale units representing a Midland Railway 10ft type (from Meteor Models). I have already bent up the ends of the bolster along the half-etched lines, having already given the metal a quick rub over with my abrasive rubber to clean the surface.

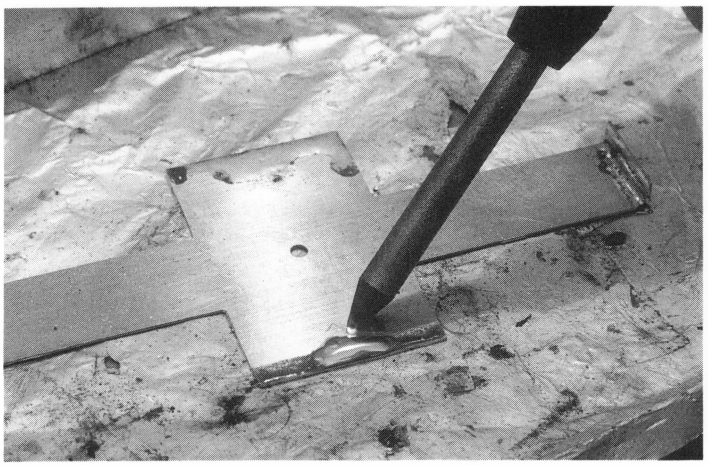


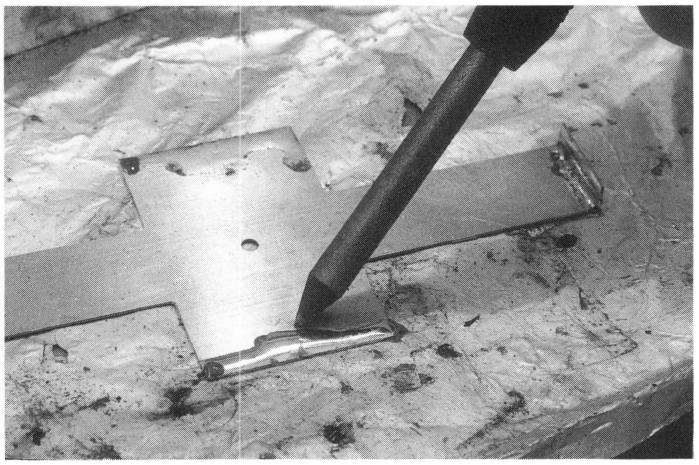
A smear of solder paint along the fold line at each end before heating with the RSU ensures that when I feed a little multicore solder into the fold, a good strong joint will result.



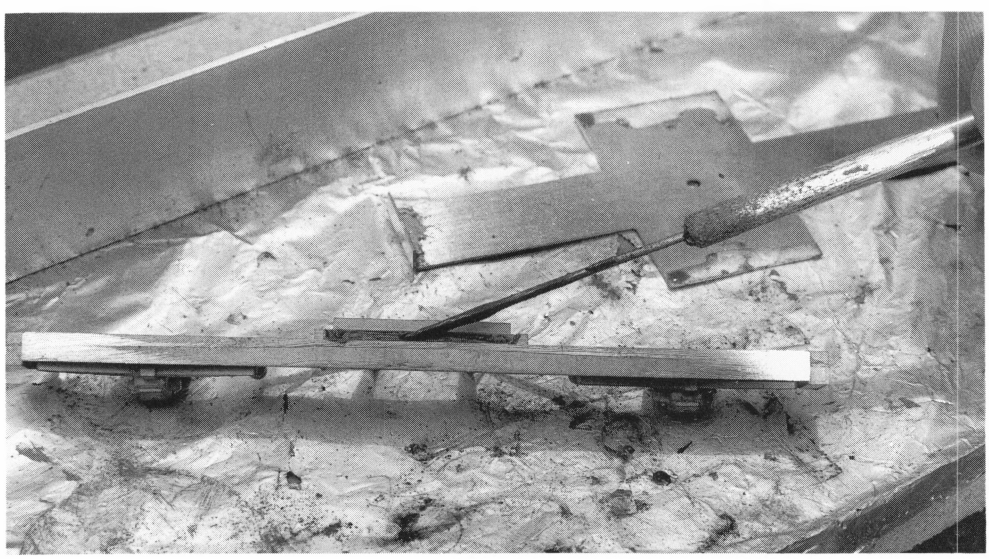
Right: I've jumped on a bit here as I have already prepared the far side of the bolster for soldering on the whitemetal sideframe. To solder whitemetal to brass or nickel-silver, the non-ferrous half of the joint area must first be tinned with an ordinary soft solder. Only when this has been done will you be able to produce a strong joint. Soldering brass to whitemetal with low-melt solder will make a joint, but it will be very weak and brittle and will break as soon as any stress is put on it – disastrous in this situation. A lot of hot air has been expended on this issue and convention currently has it that the brass must first be tinned, then the low-melt solder applied to it, after which the brass-to-whitemetal joint can be made. However, while I was trying out a few ideas, I found a short cut: spread a thin smear of solder paint over the area where the whitemetal-to-brass join will be made, then clip off a small piece of lowmelt solder from your supply – I use Carr's lowmelt – and place the clipping on the solder-painted joint area.



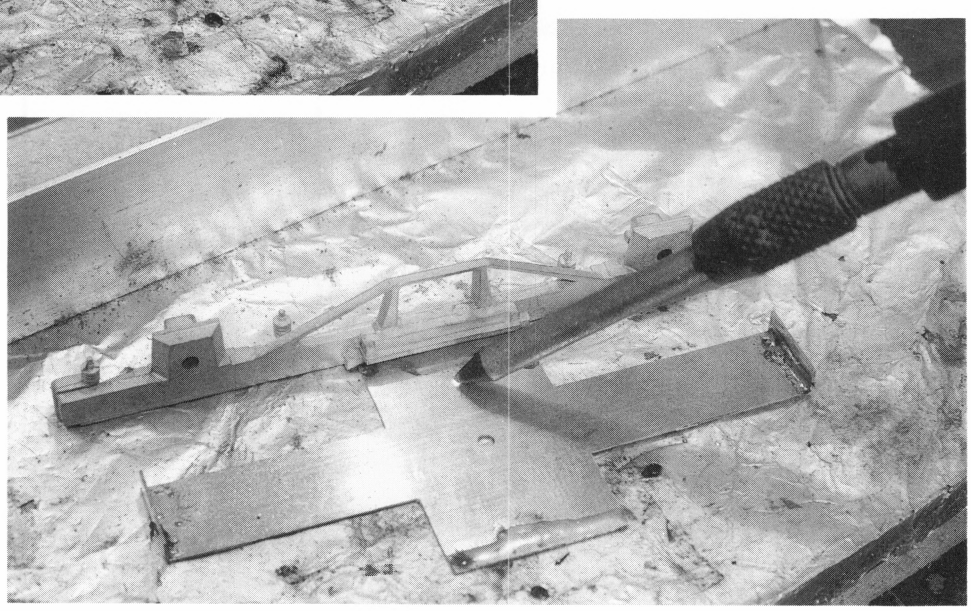




Now heat the joint area with your RSU, using a low setting. First the lowmelt will melt into a blob and then, as the heat builds up, the solder paint melts. Continue heating and in a moment the two solders will combine and flow together over the joint area. Many people seem to think that soldering whitemetal requires some special technique, and while it is true that soldering whitemetal to whitemetal requires care and control of the heat source, most joints that a modeller will make on a modern kit will be of whitemetal fitting to an etched sheet component. Other modellers tell me that you must have a temperature-controlled iron, that RSUs have very limited applications, but I don't think any of this holds water – a soldering iron, from the sort you heat in a gas flame to sophisticated soldering stations with digital readouts, from blowtorches to resistance soldering units, all are simply heat sources. It is *how* you control them that matters, not how the heat is produced. For example, I often solder whitemetal domes and chimneys to boilers with my 100 watt soldering iron – I just put the bit about 25mm from the joint area and let the heat slowly build up in the brass boiler until the joint flows. A friend recently displayed his latest pride and joy at our club exhibition, a 4mm scale GWR pannier tank from a Finney kit; it's a beautiful job and he soldered the etched-brass lamp irons on the whitemetal sandboxes with a London Road Models RSU set at its lowest current output – so, don't believe it when you are told that it can't be done!



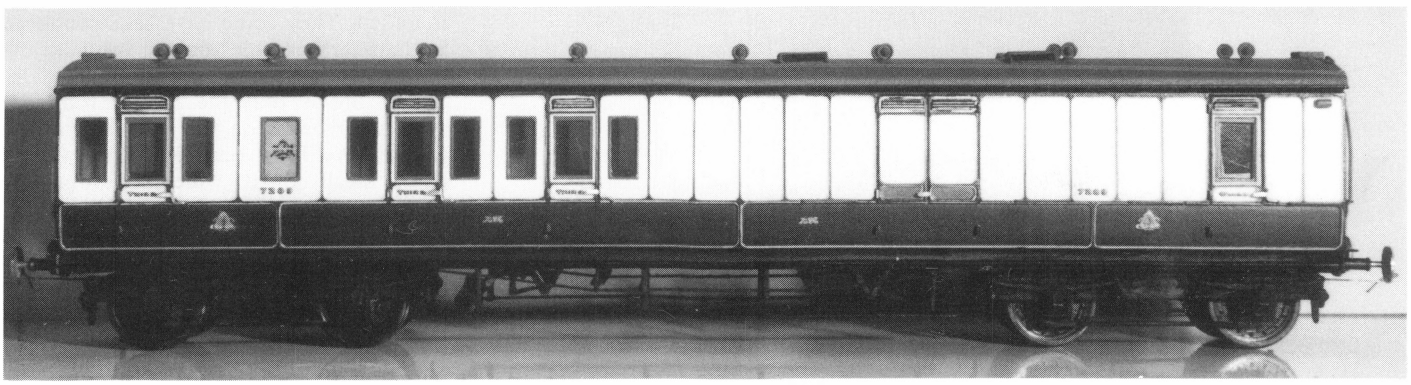
Here, I am smearing a little of the solder paint in the recess on the back of the whitemetal bogie frame where the bolster will fit. I do this because I find it allows a more gradual heat transference and jointing when the heat is applied.



Finally, the two halves of the joint are united. Line everything up and heat with the RSU. Notice that I am not holding the carbon tip directly on the joint area but about 6mm back. This lets the heat in the joint build up a little more slowly until melting point is reached and the joint made. Then switch off and allow the metal to cool until set. All that needs to be done now is clean the joint area and you will have finished the job.

LNWR 40ft Cove Roof Coaches

The LNWR's handsome 50ft cove-roof coaches were so typical of the company's passenger operations that they became an important element in the Premier Line's unmistakeable and rather superior signature. JOL WILKINSON builds 4mm/P4 examples from the little-known Eric Ramsay line of kits, recently absorbed into the London Road Models range:



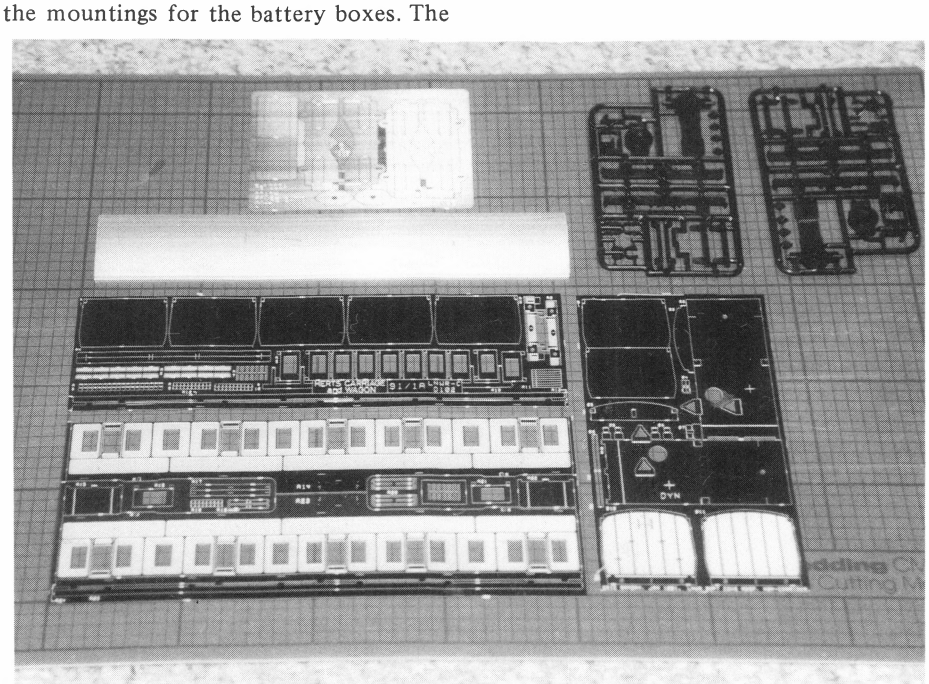
A Brake Third I built some time ago from a set of test etches when the kits were first produced. The buffer heads are too large (they should be a scale 12in) and need turning down. Notice that there are no battery boxes – the batteries were carried in the luggage compartments of the brake ends.

The range of LNWR subjects represented in model form is now fairly wide, although Sod's Law usually says that the one model you really want is never available! The introduction of any new kit of an LNWR prototype is therefore always a cause for celebration.

In 4mm, LNWR coaching stock is largely covered by kits from London Road Models, Alan Gibson, Chowbent, Modellers' World and Barrie Stevenson, as well as Trevor Charlton's wide range of etched zinc coach sides and ends. One little-known manufacturer is Eric Ramsay, one of the original builders of the 'London Road' P4 exhibition layout and now its sole owner. Some time ago, Eric designed a range of 4mm etched kits of 1905 50ft cove-roof lavatory stock. Together with a D71 motor driver of the same period, these were sold under the Herts Carriage & Wagon Company label. They were not widely available but that has changed since John Redrup of London Road Models recently took over production and distribution.

The range comprises a brake third or second D326, composite D153, third D276 and a first D102. The prototypes, built in 1905, lasted variously until the early 1950s and therefore would be at home in LNWR, LMS or possibly early BR livery. The kits comprise .012in etched brass components for the body and underframe, Ratio plastic mouldings for the bogies, an extruded aluminium roof, cast brass buffers and whitemetal detailing parts. Construction largely follows normal practice, but there are a number of features which made these kits – I built an all-first for this article – rather different to kits from other designers, at least in my experience.

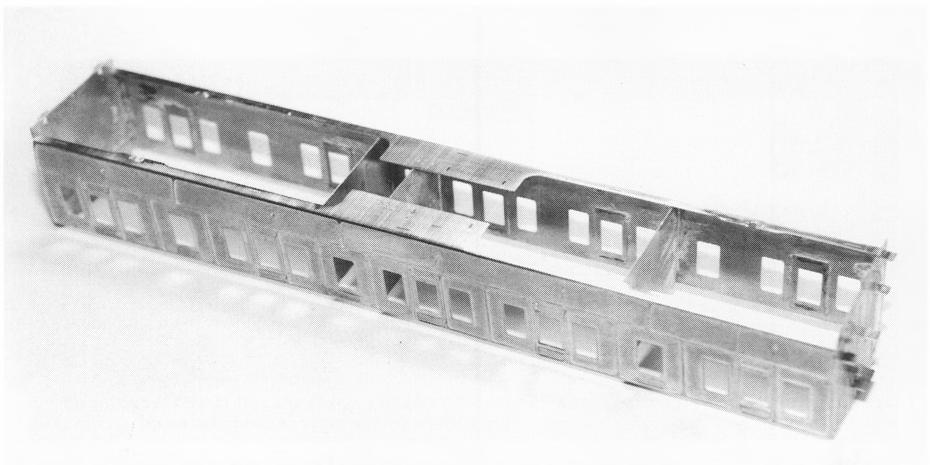
The body is a straightforward box but with a turn-under flange at the bottom of the tumblehome to provide a mounting for the solebars as well as the two 'half-floors' which carry the underframe details, bogies, etc. On this all-first, the flange is also wider at the centre section to provide the mountings for the battery boxes. The etched compartment partitions, together with this flange and the half-floors for the bogie mountings, result in a very rigid coach shell. The tumblehome and flange need care in forming to the correct profile and it is important to follow the instructions to open out the fold line, preferably with a 60 degree needle file. If you don't do this, then the bottom beading which runs the length of the coach side may become distorted.



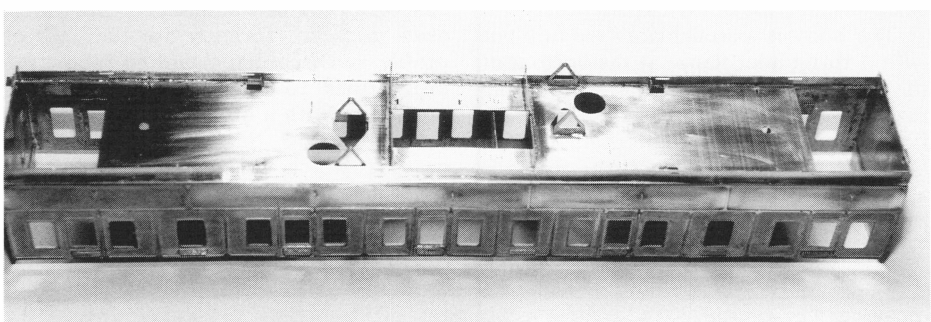
The kit components, plus the MJT equalised bogie etch. Neatly laid-out components in an etch are usually a good indication of the care which has gone into the design of a kit.

Droplights are fitted to the inside of the coach sides and incorporate the upper and middle door hinges, which pass through accurately etched slots. The lower hinges are added separately, again fitted from the inside. The door and toilet window ventilator bonnets are soldered onto the outside (where else?) and the depth of this detail adds to the realistic appearance of the coach. With their pronounced tumblehome and cove roofs, these carriages had a very distinctive appearance which the model captures well.

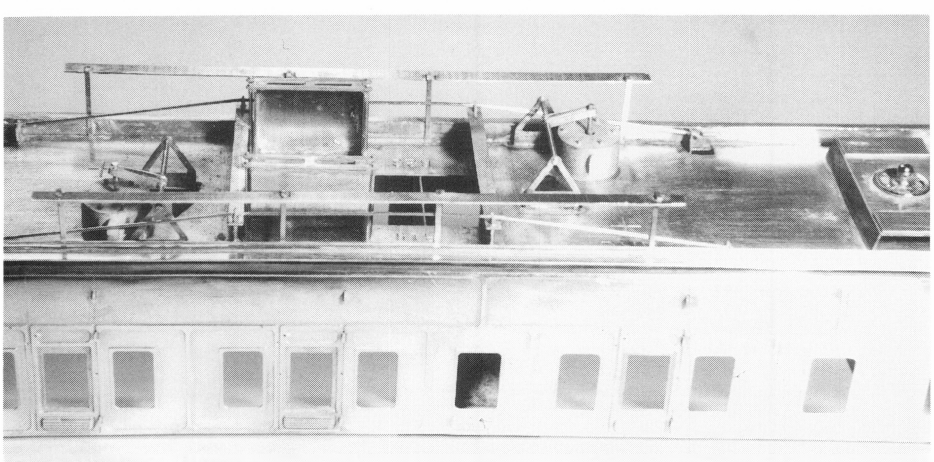
I built up the sides – complete with droplights and ventilators in place – using a resistance soldering unit, before assembling to the ends which include a couple of interesting features. The steps on one end and the alarm gear brackets at the other are fitted from the inside, through etched slots. Nothing unusual so far – but the 'box' for the alarm gear is represented by a fold-over tab and the alarm cross rod is etched, complete with the end indicator 'ears'. The buffer beams are added after the rivets have been embossed from the rear and the lower lamp brackets have been folded. Unfortunately, the rivets on the step brackets (which are part of the ends) haven't been included. They could have been produced by half-etching holes on the inside of the ends as an aid to embossing. Equally disappointing is that the fairly prominent switchgear boxes on the steps end of the coach have been omitted. Mind you, I can't recall a kit which does include them.



The sides, ends and three of the partitions assembled. The wide section of the turn-under flange has etched slots for the battery boxes, while the longitudinal slots to take the solebar tabs are just visible. Bracing pieces will be added behind the buffer beams to stiffen the ends.



The half floors in place. The brake vee-hangers fold down from the floor and the large holes provide accurate location for the brake cylinders. The upper stepboards have yet to be fitted.



Progress! Upper and lower stepboards, battery boxes, truss-rods, brake cylinders, pull-rods and the MJT bogie mountings are now in place.

Before fitting the compartment partitions, I filed out the clearance slots in the top corners as I was a little unsure if they would give enough clearance for the flange on the aluminium roof. Later, I also filed out the roof flange above each door droplight to ensure that the roof sat home fully. The aluminium roof is a good fit and can be lightly glued in place. As the coaches were electrically lighted, the roof detailing is quite straightforward and the whitemetal ventilators are cleanly cast.

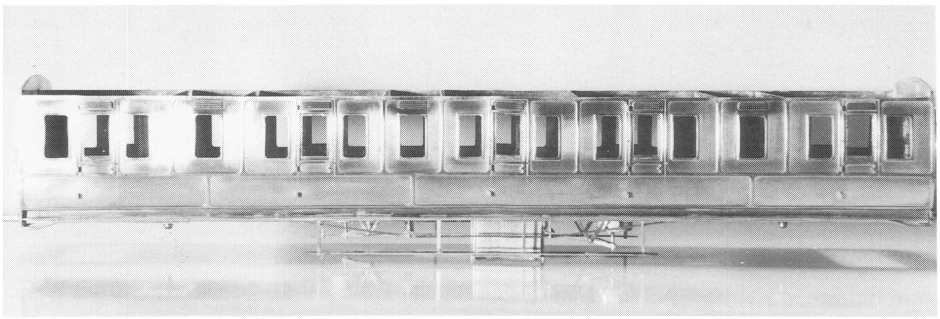
The solebars fit into slots in the turn-under flange and the stepboards in turn are tabbed into the solebars. A little care needs to be taken when soldering-up to avoid the etched brass distorting. The two half-floors locate onto tabs folded down from the turn-under flanges and have fold-up sections for the queenpost and to locate the outer ends of the truss rods – very neat! Too often there is not a positive location or anchor point for the outer end of the trussrod. I fitted the half-floors after the solebars and stepboards as per the instructions. It is important to trial fit the half-floors before you finally solder the solebars in place, in order to get the solebars the correct distance apart (there is sufficient tolerance in the fit of the solebar tabs for them to be too close together across the width of the coach body).

The battery boxes have tabs which locate into slots in the turn-under flange. The bottom supports on the boxes take .33mm wire which passes through holes in the underside of the coach to represent the supporting rods, and this all lined up perfectly and produced a very neat job. The vacuum cylinders are also unusual – they have a large diameter spigot which locates, accurately, in an etched hole in the floor, thus simplifying alignment. The whole underframe design is very well thought-out and a delight to build.

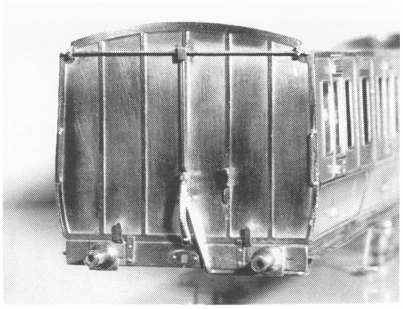
Ratio plastic bogie mouldings are supplied. I used these to provide the cosmetic detail for MJT etched compensated 8ft bogies as I model in P4. John Redrup has added some nice (non-working) cast brass LNWR buffers and vacuum pipes to the kit. I drilled out the buffer bodies to take Keen-Maygib springs and buffer heads but you could use the new early sprung coach buffers which Alan Gibson has just introduced if you want the working variety without this effort.

Etched door handles are included but the commode handles have to be bent up from 0.33mm wire provided. This latter point is not too much of a hardship, especially if you make up a jig as described by John Hayes in MRJ No. 83. Although no interior details such as seats are included, these can readily be added, especially as the integral compartment dividers provide a firm location to fix to.

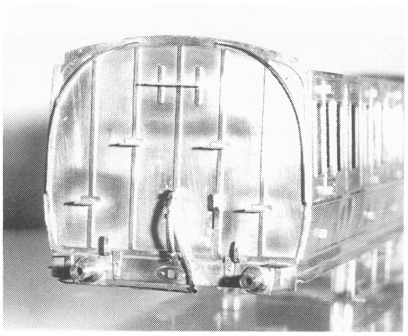
So, what of the overall result? Probably one of the nicest coach kits I have built. Carefully thought-out design which goes together well, provided that you follow the detailed points in the instructions. It is definitely one of the better, more completely-detailed LNWR coach kits in 4mm. Priced at £26.50 I think they represent good value, the only problem being that, for the period I am modelling, they usually ran in rakes of six . . .



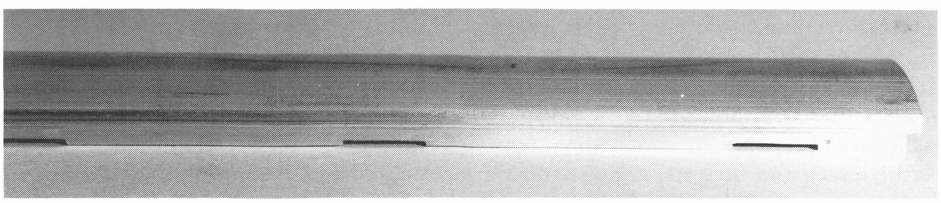
The underframe is now complete except for the whitemetal dynamo casting which I left off until later to avoid damage. Door and commode handles will be fitted after painting and lining.



The alarm gear end. The vacuum pipe, .9mm brass rod, runs below the buffer-beam and along the solebar to the opposite end.



The steps end. The handrails are formed from 0.33mm brass wire.



The flanges on the extruded roof section were filed out above the door droplights to ensure adequate clearance. The roof is a good fit and can be lightly glued in place after painting and glazing.

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In an urban setting that may not be entirely unfamiliar to some, a nearly new ale pallet wagon is moved around by a diesel shunter whose paintwork has seen many summers. The Parkside wagon kit is substantially as supplied, and the 08 is made up of all sorts – an Impetus chassis, a few fragments of Kitmaster and Hornby Dublo, but for the most part scratchbuilt.

Ale Pallet Wagon in 4mm

by TIM SHACKLETON

This recent 4mm kit from Parkside Dundas is interesting not so much for its own sake as in representing a vehicle from what, in modelling terms at least, is much the land that time forgot. Marrying progressive thinking on bodywork with a wholly traditional underframe, it depicts a 22T vacuum-fitted ale pallet wagon from the small batch that was converted from long-wheelbase tube wagons in the late 1960s. They were used to transport palletised beer barrels from the mega-keggeries to the brewers' regional distribution centres. Their working lives were very short and by the mid-1970s the wagons had drifted into redundancy or found use as barrier vehicles, often stripped of their bodywork. It is tempting to attribute the loss of the keg-beer traffic to the resurgence of real ale under CAMRA but I think the reality was more prosaic – the purveyors of hop-flavoured fizz went over to road transport, like everyone else.

The era of flared trousers and regrettable haircuts which this wagon symbolises began, in railway terms at least, with the end of steam. It encompasses a period of five or six years in which diesel locomotives – many of them still in green livery but with full yellow front ends – lost their D number prefixes, and it came to an end with the advent of TOPS and corporate blue for everything. Hardly anyone seems to model this short but fascinating stretch – perhaps it passed most of us by, while we chased industrial steam or were just too zonked to notice. This is a shame, as it was an era of great variety, in which the unfitted, short-wheelbase, semaphore-signalled railway co-existed – rather uncomfortably, it has to be said – alongside early intimations of the high-speed, air-braked system that we know today. If I didn't already have a hundred and one other things on the go, I'd quite like a crack at it – a mix of green and blue diesels with a good smattering of steam-worked lineside industry makes a tempting prospect in model form.

The plastic kit – which I almost forgot – is well up to Parkside's usual high standard. I did a little minor detail work on the underframe and added Oleo buffers from MJT, but the bodywork – which seems to have varied between individual wagons – is exactly as supplied. Livery is bauxite, with a slight satin sheen to suggest a wagon that has seen only a few months' service. The accessory market offers quite a choice of suitable beer barrels and pallets but my wagon runs empty, apart from a few bits of packing lying around on the floor. It is, I notice, Parkside's 60th 4mm scale kit. Jolly well done, say I. Their kits are cheap and accurate and – despite the comparative obscurity of this particular model – the prototypes are well chosen. We wagon builders have much to be grateful to them for.

The Parkside Dundas ale pallet wagon in 4mm scale (Code PC60) costs £4.95 from the retail trade or direct from PD at Millie Street, Kirkcaldy, Fife, Scotland, KY1 2NL (post 50p).

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Toads don't clash . . .

No, Mr. Warburton (Letters, MRJ No. 95), the GWR system did not fail! While Dia AA2 Lot 595 was 56810-34, Dia AA15 Lot 863 was 56733-82 and not 56733-830 – so there was no clash.

R. Tourret
Abingdon
Oxon

I am afraid that F. Warburton in his comments on my previous letter cannot be correct. My information was taken from my register of observations in the 1950s and 60s which show 56810 as a short wheelbase van weighing 25 tons, no extra bracing fitted (as a lot of that batch had) and not vacuum fitted. It also shows that of the batch 56810-56922, only two vans were recorded as 20 tons, and all plates recorded show them to have been built in 1905. At the time of recording, I knew nothing of diagrams, but as an embryo engineer I could recognise a short wheelbase van when I saw one. Incidentally, the van was marked 'READING R.U.' in the 1950s.

Alf Powick
Tenbury Wells
Worcester

Derv

Further to Martyn Welch's article on petrol pumps in MRJ No. 95, diesel and Derv are the same thing. The word 'Derv' is an acronym derived from Diesel Engined Road Vehicle.

Mike Nicholson
Hull

Geoff Platt

Your atmospheric view of Stratford in MRJ No. 95 may well have been taken by the late Geoff Platt but he certainly was not a renowned GER historian and modeller. His considerable talents were chiefly directed towards his first love, the LNWR, although he was not blind to the delights to be found away from that impressive system.

John Watling
Chingford
London E4

The photo was indeed taken by Geoff Platt, although we were thinking of Geoff Pember when we used the 'GER historian' description. Apologies for any confusion. *Editor*

Broaching holes

I must add to Ron Price's letter in MRJ No. 95, since, by giving an engineer's definition, he is likely to give rise to confusion amongst model makers. The tapered, five-sided tool often used to size holes in thin material is indeed a broach – a clockmaker's cutting broach, to be precise, and, if I may quote my own article in MRJ No. 57: 'they should not be confused with the engineer's broach, which is a far more violent tool; our type are more like reamers, used with a gentle, rotary motion.'

The action of an engineer's broach can be understood if you imagine placing the point of a tapered, square section needle file into a hole, then forcing the file through the metal with a press. Because of the taper, each tooth in turn will remove a little more metal, until the hole is the size and shape of the cross section of the file. The engineer's reamer is a parallel-cutting tool, used to finish to size a hole that has been drilled, or a bush after it has been pressed into place, etc. It can only produce a hole of predetermined size (taper reamers are designed to produce a tapered bore to take a taper pin, used to unite two parts, the equivalent of a dowelled joint in woodwork; they are not intended to be used to open up holes in thin material).

Dave Holland
Cressing
Essex

Dare I broach this topic again, and point out that Ron Price (MRJ No. 95) is quite correct, but for the fact that an engineering broach and a clockmaker's (or watchmaker's) broach are two very different animals? A clock broach is a tapered, five-sided tool designed to open out a hole to a larger diameter, without shifting its centre. Typically, the tool is used to open out clock plates to accept bushes for worn bearings, and then, after the bush is fitted, opening it out to accept the pivot. Clock broaches come in two forms, cutting and smooth. The smooth one is used to polish the inside of the hole; cutting broaches are the ones most applicable to modelmaking.

Paul Berntsen (one-time horologist)
Auckland
New Zealand

EMF and back

Having been testing motors for the EM Gauge Society for some years, I felt I could not let Richard Syms's assertion, in his letter in MRJ No. 95, that 'the back-EMF of coreless motors is minimal' pass without comment. Motors differ in such features as armature winding resistance, free-running speed, internal friction and current/torque ratio, but in all cases the back-EMF plays an essential role in determining their characteristics. To understand how the free-running speed of a motor is established, we need to remember that electrical machines such as these can operate equally well as motors or generators. We could run a particular machine as a generator and measure the speed of rotation required to give an EMF of, say, 12V at the terminals. If the same machine were then run as a motor from a 12V supply, the free-running speed, with no mechanical load on the shaft, would approach the previous figure. It would never quite reach it, for if it did, the generated EMF, now referred to as the 'back-EMF', would exactly equal and cancel the supply EMF so there would be nothing left to drive current through the armature resistance. In practice, therefore, the speed would stabilise at somewhere around 80% to 90% of the 'ideal' figure, generating a correspondingly reduced back-EMF, since this is directly proportional to speed. The difference between supply- and back-EMFs, 1-2V typically, would suffice to drive a modest current through the armature, thereby providing sufficient torque to overcome the friction in the brushes and bearings and some energy losses in the magnetic path. This description of how free-running speed is established is applicable to all motors and all supply voltages.

A motor installed in a locomotive and pulling a train has to deliver an appreciable torque and must therefore draw a correspondingly large current. At a given supply EMF, this calls for a smaller back-EMF than under free-running conditions so that the net EMF can drive the required current through the armature resistance. The speed must thus fall compared with the free-running speed; the greater the torque demanded, the lower will be the speed, an unsurprising conclusion.

Back-EMF, of course, cannot be directly measured while the motor is connected to the supply. This is why all feed-back controllers have to operate on some kind of pulsed system, allowing the back-EMF to be monitored during the intervals when the supply is interrupted and the motor is running on as a generator. An interesting experiment for anyone with access to an oscilloscope is to observe the waveform across the terminals of a motor powered by a Pentroller; in this case the supply is a quasi-DC with very brief interruptions several hundred times per second during which the back-EMF is sensed. The waveform shows the two parts very clearly, with the back-EMF just a little lower than the supply voltage when free running. If the motor is mechanically loaded by grasping the shaft, the speed falls slightly and with it the back-EMF; this is sensed by the controller which applies the appropriate corrective action of increasing the 'supply' part of the waveform so as to compensate almost completely for the additional load. This demonstration works very well with a Portescap, with iron-cored motors the waveforms are somewhat confusing.

This brings me to another matter, and at the risk of unduly lengthening this letter, I would question Allan Sibley's choice of a Pentroller for powering his rolling road (MRJ No. 93). The Pentroller is an excellent choice for use on a layout but, I would suggest, for a test bed one does not require a *good* controller, which will tend to mask deficiencies in a mechanism – a *bad* controller which will exaggerate them is to be preferred. Maybe Allan does not build mechanisms which have a stiff point once per revolution of the driving wheels but many of us lesser mortals do. A Pentroller will compensate for this in the manner described above by providing extra power at the stiff point which may thus pass unnoticed; a resistance controller, on the other hand, will ensure that not only does the motor slow down at the stiff point but because it then draws more current there will be an increased voltage drop through the resistance, further decreasing the speed. For similar reasons, I feel that the use of the digital current meter is not wholly appropriate. Such instruments use a sampling technique (often about three times per second) and so are really only satisfactory for measuring steady currents; with fairly rapidly fluctuating currents it is often difficult to get sensible readings. Provided it can be wired so as to take care of forward or reverse currents, as noted by Allan, I would suggest that most people would be better served with a conventional analogue meter which would then waggle to and fro in sympathy with the stiff point, thus further helping to emphasise the shortcoming.

J. Douglas Smith
Weybridge
Surrey

The Barmy Drillers' Club

Would you believe that there are actually *three* people mad enough to attempt to put a 2.5mm drill into an ABS Models GWR self-contained (or SR brake van) buffer housing (Letters, MRJ No. 94)? What's more, John Hayes, Dr. Anthony J. East and I each use slightly different techniques for springing! Prior to counterboring with the full-size drill, I put a 1mm hole through into the spigot and this later takes a Maygib brass buffer bush superglued in after trimming back to 5mm overall length. (Cut

spigot roughly to length, place buffer body over blunt end of 1mm drill protruding 5mm from pin chuck jaws and file until you hear a horrible scraping noise.) Though Mike Trice has come to the rescue with a variety of suitable buffer heads, my earlier ones had to be turned down from some borrowed from Maygib LMS loco buffers.

Whilst this system works for me, I don't claim any superiority over the other methods. I must, though, query Dr. East's use of the small-headed castings; I suspect that he has a rogue batch of the large-headed ones as I've never had any problems with them – quite the opposite, in fact, as the others, with a flat on the shank, are difficult to get running true in the Unimat.

Neil Knowlden
West Wickham
Kent

The one-motor A4

Having seen MRJ No. 94 containing Tim Watson's A4 built from the Martin Finney kit, I would echo the comments you made back in your editorial to MRJ No. 67, which in that case referred to John Hayes' 4mm A3, also from a Finney kit. Despite being in 7mm, I think the A4 deserves all the superlatives previously used to describe the A3. I was intrigued, though, by Tim's rationale over the valve gear, since as an express engine she must have spent the great majority of her time in forward gear. However, it does cause me to remember an exquisite model built by the late Tony Ascott which he showed me some 25 years ago (and would still pass muster under the probing eye of the MRJ camera). The model was 4mm scale and either a Brighton Pacific or Baltic tank (I can't recall exactly which) with a removable cab roof, and I remember Tony using a pair of tweezers to wind the reversing wheel and move the valve gear into forward or reverse position.

Returning to Tim's A4, why use a separate motor for the valve gear action? How about driving it from the traction motor (see sketch)? On the first few turns of the motor the nut runs up the screw until it runs off the threaded portion and up to the spring. On change of direction the spring urges the nut back on to the thread and takes it to the other end of the rod. A greater challenge might be to devise a system to monitor the drawbar load and notch up/down as appropriate!

Anyway, despite this nonsense I have written, please keep showing impeccable models that give us lesser mortals standards to aspire to.

R. M. Jones
Heswall
Wirral

Not the hole truth . . .

I've just had to check that my latest copy of MRJ was not April's! Right in the middle of an otherwise excellent article by Dr. Tim Watson on building Martin Finney's A4, I find a recommendation to elongate coupling rod holes! Elongating holes is a definite no-no in my book. It is bad engineering practice in any scale, serving only to cover up mistakes in building and quartering. To do it to a 7mm Finney kit is a positive insult. My experience of these state-of-the-art kits is that almost uncanny accuracy is the name of the game, particularly vital areas like rod alignment. Maybe you can get away with it in 2mm, but several hundred quid's worth of Finney A4 whispering past at eye level with the rods even slightly out of synch with the crankpins (or worse, the wheels) is just not acceptable. More to the point, any newcomer to finescale or MRJ in general will think it is accepted practice.

Anybody investing in expensive kits and not confident about quartering would do well to invest in GW Models' excellent product, advertised in MRJ, and take all the guesswork out of the equation.

Bruce Wilson
London SE1

Holes, Hollywood style

In MRJ No. 93 I read Allan Sibley's suggestion that best results with split axles would be obtained by drilling air escape holes in the female half. I happened to be making a batch of 2mm diameter splits today, so I tried his idea. I found it devilishly difficult to get a drill through without wandering – then inspiration struck. I took a scrap of brass stock – half an inch square will do – and drilled a hole large enough to allow the axle to be slid easily in. Then I turned the block through 90 degrees and drilled a 40-thou hole to intersect the first one. If the depth of the axle hole is controlled, and the vent hole is carefully placed, drilling the holes on my drill press is easy.

Kevin Harrop
Hollywood
California, USA

Pink for red

With reference to the article on loco construction by Guy Williams in MRJ No. 93 and his reference to difficulties when using red paint on buffer beams, during the late 1940s I was apprenticed at Merryweather's, the fine engineers, my father being a coach painter there. The undercoat for red was a flat pink.

Derek Fox
Lampeter
Ceredigion

One spoke short of a Mickey

Nice body, shame about the legs! (Micky Mouse Makeover, MRJ No. 92.) Whilst the driving wheels appear to be the correct diameter with the correct number of spokes, they do not appear to have the V-rim which was a characteristic of these locomotives. Also the pony wheels should be 3ft 0in nine-spoke with V-rims. Those fitted appear to be 3ft 3in, 10-spoke with plain rims. A good illustration of what V-rims look like may be found at the bottom of the inside front cover of the same issue.

John G. Ashley
Stafford

The other (earlier) Dewsbury

I note with interest David Jenkinson's article in MRJ No. 92 regarding his proposal to adapt Bingley station buildings for use on his 7mm layout. It is often said (round these parts anyway!) that what Yorkshire does today, Lancashire did yesterday, and as if to prove it, I enclose a photo of my station building for the Manchester Model Railway Society's new 4mm scale layout 'Dewsbury Midland'. Since you ask, we came up with the name before we found out Mr. Essery was building his layout.

The model is built almost entirely from Plastikard, scribed with a scraperboard knife as per Geoff Kent, and roofed with Wills sheets. It was awarded the Nuttall Scenic Trophy in the 1994 MMRS Competition and as Bob Essery had his layout in the same show, it was interesting to see his reaction when he read the station name!

It will be a year or two yet before the layout is complete as a great deal of work remains to be done. As the setting is unashamedly urban with a large number of buildings outside the railway boundary, we hope it will be a bit different from the usual layouts.

Phil Taylor
Worsley
Manchester

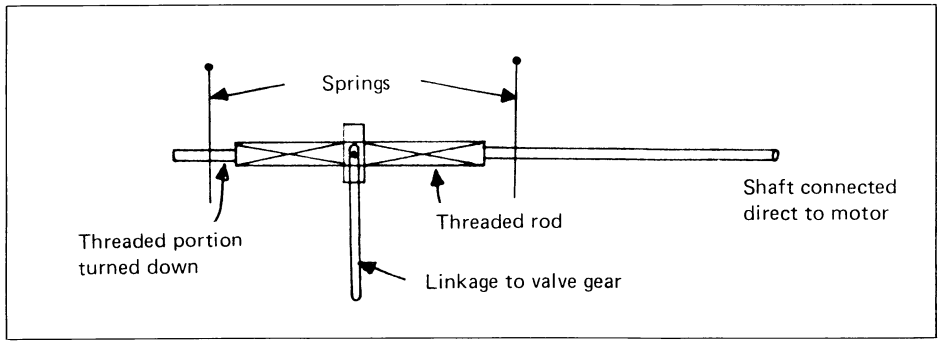
LNER Cattle Trucks

I would like to have replied to letters regarding my LNER Cattle Trucks article in MRJ No. 87, but many subjects were opened and my research couldn't produce definitive answers to all the points raised. Two aspects do deserve enlarging upon however:

Regarding traffic, I have been unable to find a written rule about the placing of loaded cattle trucks behind the loco and have been advised by ex-railwaymen that 'as far as is practicable' would have applied. I could have written a great deal more about workings – indeed some of it had to be taken out of an already long submission. It's an awkward fact that most railway modellers and magazines concentrate on locos/vehicles, and space for workings is usually short. And articles on the latter tend to be hard to digest. All this is unfortunate and it's been said that while most model railways have accurate stock, 90% of the trains are wrong! On my layout we try hard to copy or mimic accurate formations and the result is very powerful. No longer are you looking at a locomotive pulling something or other, but an actual train. It is as if all those black-and-white photographs from the past have come to life, and in colour.

The operational side of the hobby is neglected. An underlying cause is too many caption writers focusing on the loco and ignoring everything else in the scene, or when they do make an effort, it's often an uninformed guess. It is up to editors to press for better content and captions and while Wild Swan has a good record, other publishers do less well.

On the subject of reviewing, kitmakers Parkside Dundas suggested that I should have contacted them because 'an improved version of the kit was in hand'. In fact I did – and I explained that the purpose of a review was to cover what was on the market for the benefit of the reader, not the manufacturer, and that when (or if) an upgrade appeared, it would be a 'new' product and should be treated accordingly. Unfortunately, Richard Hollingworth and Andrew Hastie at Parkside didn't swap



Manchester MRS's 4mm 'Dewsbury' model.

notes before writing and a year has passed during which the new improved version still hasn't appeared. [*It has now. (Editor)*] The moral is that reviews are for the benefit of the reader and prospective purchaser and it is incumbent upon reviewers, at a time when your local W. H. Smith is full of magazines such as *What Car?, What Mountain Bike?* and so on, to tell it as it is.

Steve Banks
Banbury
Oxon

The future's here

It may have escaped people's notice but the future is here already – it's maroon and gold, and is called EWS. There is a revival in wagon-load freight with the expansion of services on the West Highland line, a regular service on the Far North line and trials on the Kyle of Lochalsh line for instance. Elsewhere across the country, existing freight flows seem secure – indeed it seems a lack of wagons is the reason for not gaining new traffic. On the passenger front, the newly-franchised passenger services have increased the number of trains in the latest timetable changes. There has also been a change of government and while they have not revealed their stance towards railways, it would not be hard to be more pro-rail than the last government. Things can only get better in the future after the contraction of recent years.

Phil Eames
Swadlincote
Derbyshire

What future?

While I share many of your views (MRJ No. 95) on the conservatism of British railway modelling, I wonder if the nature of what we model has set the course we follow? Many people model railways to recapture fading memories, others to create something they were born too late to know (which might explain why my daughter wants a V2 for her 14th birthday!). Some prefer to copy what they can see down the road, today. So why shouldn't others go for the future?

But it is difficult to define the future, in railway terms, because it lies so far ahead. For example, in two days this week I have seen or used the high speed trains which will dominate much of the European rail network for, probably, two decades. And whatever replaces them will have to fit the same infrastructure for another 25 years. Unlike the vacuum of space, there is a limit to the size and shape of a train – it restricts the scope to freelance. And if a model does not mimic steel wheel on steel rail does it still count as 'railway' modelling? Many of the examples you quote are static models, albeit often with working parts, that don't capture the movement implicit in railway modelling.

Which brings me to operation. After more than 30 years in the railway industry, and even longer watching it, I try not to be misled by rose-tinted nostalgia. I've also learnt that some who work(ed) in the industry profess a wider intimacy with its many parts than their narrow experience would support. Monty Wells is right – it is easy to forget, confuse, or not know, the realities of things long gone. And it can be very hard to model them. Nostalgia, alas, is not what it used to be, but I do question Bob Essery's remarks. Steam locos left BR in 1968 but much of 'the steam railway', as a way of working (and life), outlasted the locos by ten years or more. For instance, in the marshalling yards that I ran in the 1970s most of the work was done in the same way as it had been for the previous 40-50 years. After all, there's a limit to the number of ways in which you can shunt wagons. I agree, totally, that authentic operation is not possible without 'correct' (whatever that means) track layouts and signalling. All I would say is that when planning the real thing I pay as much attention to what it has to do as to any legal requirements. I despair of layouts said to provide 'interesting shunting', or those that engage in the aimless shunting mentioned by Bob Essery. Understanding the real job, and trying to copy it, can provide ample interest and challenges.

Shunting was usually done with the minimum number of moves. And, until the hastening pace of change from the 1960s onwards, involved much repetition. But come on Mr. E, I'd love to meet any shunter from that era who claims he always did the job safely. The work was inherently dangerous and *all* shunters cut corners, and broke basic rules, to save time. Self preservation – yes; safely – not always.

Finally, whatever the era, we have a choice of modelling standards, in scale, appearance and – I say – operation. The accuracy of one need not match that of another, so long as we don't claim that it does. But if the aim is to get all, or any, of them right, then properly founded research is essential. Tales of skidding spamcans, or muddled history, are no nearer proper research than copying the layout next door.

Mike Romans
Tilehurst
Berkshire

Operation

For some time I have been acting as an unofficial talent scout for the annual Utrecht exhibition but I have never been able to suggest many layouts as being worthy of the expense of shipping them across the North Sea. One year, the Utrecht exhibition organiser came to see a British exhibition for himself and I wondered if his visit was to see why I was offering so few layouts from the nation which is reputed to be *the* railway modelling country.

The first thing he found was that nearly everybody was modelling stations, not railways, and the second thing was – as he succinctly put it – "that many British layouts are as beautiful as oil paintings by talented artists – and about as much happens!" Most layouts featured in MRJ are said to have 'atmosphere'. From the photos, I suspect that the atmosphere conveyed at exhibitions is that of boredom.

Dave Rowe
Sidmouth
Devon

As someone who has spent a great deal of time promoting the numerous merits of branch line modelling, I cannot let Monty Wells's comments in MRJ No. 95 on branch termini go unchallenged. He is, of course, entitled to his opinion but to advocate that we should all turn to twin-track tail-chasers disregards the time-space-money constraints under which so many of us are obliged to work (and for whom the branch terminus model is often a very acceptable solution) and would, in turn, simply impose a different pattern of sameness on railway shows.

But what has really disappointed me within the current debate on exhibitions and layouts has been the one-eyed view of modelling that so many correspondents seem to perpetuate – in particular, the notion that interest can only be equated with *movement*! What has happened to the celebration of the *craft* of modelling? What about the enjoyment of engines and stock as static (or semi-static) models, the detail, the set pieces and cameos, the interesting perspectives and views that a well-made and thoughtfully-designed layout will present? Slow running may bore the pants off some patrons at exhibitions but others will enjoy the performance of a well-built model and be interested to know how that performance has been achieved, thereby learning from the experience of others. I would also venture the opinion that layouts where trains zoom around in all directions are not only inherently unrealistic portrayals of most of the railway settings I know or can recall, but are also – in their own way – just as limited in their appeal as the

branch model. My own experiences of exhibiting a hyper-detailed, slow-running (GWR) branch terminus (Faringdon, see MRJ No. 77) tells me that whilst some people will always give such a model no more than a glance, many will stay far longer than the couple of minutes that Monty so dismissively assumes. I think the record goes to a gentleman at the Staines show who drew up a chair and watched for more than an hour, absorbing the scene, watching the trains and asking questions about the layout.

In short, our hobby is populated with all kinds of people who get very different rewards from making models and attending shows. We would all do well to remember that fact and temper our criticisms of other people's interests and efforts accordingly.

Stephen Williams
Stafford

I agree with Monty Wells that it is time we got away from branch termini. As for double-track ovals which he suggests – boring, boring, boring! What we really need is a long straight double track, say 30 yards, a backscene with moving clouds (film or hologram), no non-moving figures, no non-moving trees, sound effects, smells (if Madame Tussauds can do it, so can we) with unlimited locos and stock, all in an enclosed shed with no other layouts, and no casual visitors causing extraneous noises and distractions. Any multi-millionaire with money to spare should consider it.

T. I. Cheek
Warley
West Midlands

The juxtaposition of letters from Bob Essery and Monty Wells in MRJ No. 95 was extremely interesting, since although, superficially, they addressed the same problem, Monty Wells was, with some justification, complaining about the very thing Bob Essery was advocating – strict adherence to prototype practice.

Bob's valid criticism actually reveals a very common mistake: putting all one's efforts into building the layout to the expense of thinking about operation. What he describes was the direct result of omitting to prepare a plausible operating schedule before appearing at an exhibition. There is no excuse for this. When, in the late 1940s, I helped Peter Denny operate 'Buckingham' at the Model Railway Exhibition, we ran trains to a prepared timetable. This was not even a novel idea, since Bill Banwell and Frank Applegate ran the first terminus-fiddle yard layout to appear at an exhibition, the near legendary 'Maybank', in this fashion. As one of the few survivors who saw this line in operation, I can vouch for its drawing power – I spent well over an hour watching the sequence unfold in 1939. After the first sequence had ended, I managed to get to the front of the throng and was able to appreciate the beauty of realistic operation.

The original idea behind the small branch terminus-fiddle yard was to create a realistic layout that could be fitted into a limited space. I should know, I was one of those who put the idea forward all those years ago. This point was brought home at this year's ExpoEM when I spoke with Martin Goodall and commented on the improvements in his layout 'Crichel Down'. He said, a little sadly, that this was the most space he was allowed for his layout. His operation bent prototype practice beyond breaking point. Speaking from personal knowledge of light railway practice on the old WC&P, 90% of the time the station should have been deserted. The simple fact is that if you model a station where very little happens on the prototype and then operate strictly in accordance with prototype practice, very little happens on the model. I am not criticising this, provided it is done by consenting adults in private. At a public exhibition we must remember that our object is to amuse and entertain the public with the hope of persuading one or two to take up the hobby. Martin Goodall was doing this to perfection by not only showing that one could build a very attractive little station in next to no space at all, but by parading an array of stock that would strike a chord.

I would take Monty Wells to task for an over-enthusiastic description of branch terminus operation. Speaking again from personal experience (and, remember, I spent some 15 years in a town served by just such a station) for much of the time very little happened. The same M7 on the same pair of coaches shuttled up and down the line, making connection with the London trains. Once a day, the through coach would be trundled up to Seaton Junction, once a day the through coach would be brought back. On summer Saturdays there would be the through train – in the early 1950s we even had two through services, one of which was worked by an Adams radial working back from Lyme Regis.

The only effective way to break this monotony on a branch terminus is to introduce as many different train formations as you can devise. This is easy enough provided your fiddle yard has the necessary capacity – three roads are the bare minimum, five are better. Working out why so many different trains run into the station is rather more difficult. Where the model represents an actual prototype, common sense keeps on telling you that there is no way that so many different trains could have run into that station. Not that this need deter you – at Expo EM, Frank Davies and his team were operating 'Kingsbridge' in this fashion, giving us an opportunity of seeing a fine selection of GWR trains in action.

It is much easier to account for a variety of trains on a continuous line, but in order for this type of layout to be effective, not only do you need a very extensive set of storage roads, the operators need to exercise rigid discipline. I recently saw a fine example of how not to work this type of layout. The model was an accurate representation of a section of prototype track, incorporating four tracks and a junction. Visually, the accurate scenic development was no more than an effective backdrop for what should have been the high spot of the model, the trains. Unfortunately, not only were the storage roads completely inadequate for the purpose, but the operators were content to let the same train lap endlessly. This display of unimaginative tailchasing was in stark contrast to a layout that backed on to it, where, thanks to a set of loops that held over thirty complete trains, viewers were entertained by a continual succession of prototypically-correct trains running through attractive scenery. Names have been withheld in order to spare the blushes of a group of dedicated modellers. If only they'd put as much thought into the working of the layout as they had in its design and construction, it would have been breathtaking. As it was, it saddened me.

It is possible to have interesting, satisfying operation on any style of layout. This was demonstrated to the full at this year's Expo EM, where the EM Gauge Society brought together another superb selection of high quality models of all shapes, sizes and styles, with plenty of imaginative operation to provide interest. For me, the high spot was 'Ambergate'. Years ago, travelling through the prototype on my way to Manchester, I thought what a lovel model it would make – if only you had the room. My heartfelt thanks go to John Webb and his team for justifying my guess in so magnificent a manner. Perhaps there was a shade too intense a service, but only a bigoted nit-picker could find fault with that. It was wonderful, for a short while, to be a time-travelling trainspotter in such a lovely part of England.

Cyril Freezer
Hemel Hempstead
Herts

This business of exhibition operation seems to fall into several distinct categories; there are those who find the reliability of what's on offer questionable, those who want more 'spectacle', while Bob Essery adds a new strand with his comments on unprototypical layouts and operations.

For as long as the trade markets turnouts with plastic crossings and RTR locos with rigid chassis and skimpy pick-ups, we will never be rid of locos needing prodding. Club layouts, where stock is supplied by different members with different wheel and coupling standards, are particularly prone to problems. The electrics, too, are often designed for cheapness rather than reliability. Even if you install the electrics to professional standards, you can still get caught out occasionally. I had some electrical gremlins with the Yaxbury Branch which turned out to be due to a poor contact in a heavy-duty industrial quality multipin plug and socket. I found out later that some professional colleagues had had similar trouble with that breed of connector.

So far as 'spectacle' is concerned, considerations of size and cost mean that there will never be many layouts around that can provide it. An express in 'N' lacks impact while even a pre-Group 4–4–0 and half-a-dozen coaches needs a lot of room in 'O' gauge if it is to run at express speed far enough to be impressive. Such a layout is also expensive to build and transport – not many clubs or individuals could finance it – while the space and transport costs will limit the number of shows that could invite it. Lack of likely invitations may dissuade a club from starting unless their premises are large enough to house it all as a running layout at other times. It can also bring us back to the standards problems if stock has to be supplied by members. So far as private layouts are concerned, family responsibilities and their effect on space, disposable income and time will ensure that the branch terminus has a bright future, contrary to Monty Wells's wishes.

There are two sides to Bob Essery's comments about lack of prototype accuracy in exhibition operation. If no one under 55 among the operators has first-hand knowledge of steam era operations, then the same is true of the audience. How many of them knew any more about shunting than the two characters Bob cites? Come to that, how many people over 55 who went train-spotting in their youth and watched a pick-up goods shunting a yard had any real appreciation of what was going on? When I've been exhibiting, I've set the road for a run-round movement, cleared the ground signals, stopped the loco clear of the fouling bar, pulled the lock lever before moving the turnout, and relocked it before signalling the loco back to its train. I've often wondered what percentage of the audience even noticed that there *were* ground signals or would know what the fouling bar was for, still less where to look for it on a layout.

The 'hardware' of our railways is quite well documented – witness the amount of detail James Snowdon was able to quote in MRJ No. 95 about the brake, buffer and ventilator permutations on a far from common goods van. But the 'software' – what they actually did with the hardware – is much harder to find. A working timetable will only tell you how much time was allowed for yard work, not how it was performed. In *Model Railway Operation*

and Maintenance Manual (Percival Marshall, 1955) Ernest Carter gave a detailed log of the operations performed by a pick-up goods at two stations, which makes interesting reading not withstanding a couple of misprints. But that's long out of print and you'd have to be over 50 to have a copy. US modellers are better catered for. Bruce Chubb's *How to Operate your Model Railroad* (Kalmbach, 1977) runs to 184 MRJ-size pages with a vast amount of prototype detail, much of it only relevant to North American practice, but making it glaringly obvious that no information was readily available on how British practice handled the same issues. Cyril Freezer had a stab at a book on operation recently, which probably represents all that there is a market for over here, but it was nowhere near such an in-depth study as its US counterpart.

Bearing in mind that the population of the USA and Canada is four or five times that of the British Isles, there's that much bigger market for specialist books.

Jas Millham
Chelmsford
Essex

Having read the correspondence on exhibition operation in MRJ Nos. 93 and 94, I offer some practical reasons why I, as an operator, tend not to want to talk to the visitors at exhibitions. I do not act as an operator very often, but have attended both Scaleforum and some local shows in that capacity. Most of my experience has been with two layouts, both P4 – one is a large continuous-run main line, the other is end-to-end and much smaller.

- One layout is owned and largely stocked by the group that built it, of which I am not a member. The other layout and its stock are the property of the individual who built it. In both cases, therefore, I am using other people's property. Much of the stock is valuable, and, even more importantly, represents many hours of careful work by its builder. I must not be careless with it.
- Both layouts are generally reliable. However, over an exhibition weekend, wheels do go out of gauge, operators, however good, do make mistakes, track joints do come unsoldered, intensively-used locomotives do suffer failures, and insulation gaps do close up, causing locomotives to move unexpectly. These things don't happen often, but when they do, the operator may have to respond quickly to avoid further damage.
- On the smaller layout, many shunting movements are in short sidings. A lapse in attention may result in 'running out of road' and hence a derailment.
- Shunting realistically, rather than just moving wagons about at random, calls for some thought about how it is to be done, particularly in limited space, or the result will be confusion.
- On the larger layout the operators are three to four feet away from visitors, inside the continuous circuit. This impedes conversation, especially in a noisy exhibition hall.

As a result, I feel that I have to give most of my attention to operating the trains, which is, after all, my reason for being at the exhibition. I cannot give much attention to conversation. Don't forget that I can't stop operating to talk, because visitors, rightly, then complain that no trains are running. An operator sitting outside the layout just to talk to people is a possibility for large layouts. I have tried this once or twice, and have found it generally rather boring. The impression I have gained is that the number of visitors who want to talk to a layout operator is actually relatively small. Many just want to watch the trains, or discuss the layout with their friends. With smaller layouts, such an outside operator may obstruct the view of the paying visitors too much. Small layouts may also not have the necessary spare operators available, and exhibition organisers may not want to pay the additional costs associated with extra operators. Finally, don't forget that some operators may not feel comfortable taking on a public relations role.

In contrast to this experience, I have for the last two years assisted another member of my Scalefour Society area group with a modelling demonstration at a one-day exhibition held by a local model railway society. We took some track and rolling stock items to provide a display, and talked to visitors on virtually any model railway topic they wanted to raise, whether P4-related or not. A lot of people talked to us, usually about quite basic topics. If we couldn't help, we found, or told the visitor how to find, someone who could. The great advantage of this approach is that we could talk freely to the visitors for as long as they felt was necessary, without distractions.

I fear that I may on occasion be one of the 'stone-faced' operators referred to by David Birch in MRJ No. 94. I hope that the above comments will show that it isn't because I am not enjoying myself or because I am indifferent to the public relations aspect of the hobby. I do enjoy exhibition operating very much, I also feel that PR should not be ignored. I am not sure, however, that it is right to criticise layout operators if they concentrate on operating.

Noel D. Anderson
Bristol

I sympathise with those who took the trouble to write regarding model operation at shows. I had difficulty communicating when I first became involved, and my reaction was to say: "Cheer up, you're supposed to be enjoying this" – a comment that usually brought an evasive smile. The members of the Twickenham & District club with whom I spoke about this phenomenon agreed that many operators do appear to be so totally engrossed that all else about them disappears into oblivion. At most exhibitions I have a small demonstration table and my job is to interface between the model and the public, to answer questions, to have my leg pulled or whatever it takes to make it work. I also have a five-question young person's competition which is rewarded by a lollipop and a certificate; all the questions are about scenic objects on the model, such as the name of the ticket collector and how many dogs there are. By entering, youngsters (and often, the parents) become involved in modelling in a broad sense, not just by watching trains running round. They are made aware of everything on the model and have to look closely into the scene itself. It becomes a game which they enjoy and will remember.

On speed of operation, the death crawl is all very well on club nights when somebody wants to show how well they have done, and quite rightly. But an exhibition is different altogether. When starting Hayling, I bought a couple of videos and was surprised at just how roughly trains stopped and started. Terriers really dug their heels in once they got going and fairly rattled along. I try to encourage operators to emulate this, but in some cases there is a marked resistance to rapid acceleration and deceleration. My personal view is that things should move to provide entertainment, with gaps kept to a minimum. The Hayling sequence tries to emulate single-coach working at the start of the day, building to frantic activity and four-coach trains, and diminishing until the last train departs again with two locos. I think it works!

As far as people standing in the centre eating sandwiches is concerned, there is another matter worth considering. At Epsom, Hayling was seriously short of operators at times and even I had to do a few hours at the helm – so that shows you how desperate it was. In that situation, it is difficult to get a lunch break and I ate mine on the hoof, working at the back of the model. However, that does not excuse a knot of people chatting between themselves and totally ignoring those who paid to enter, nor is it fair to the exhibition organisers. While exhibitors are not professionals, a polished presentation is not an unreasonable thing for the public to expect.

Angela Halliday
Hounslow
Middlesex

I have been mildly astonished at some of the views expressed in the scale running debate. Methodologies involved in the running of a model railway are subjectively based, as are the criteria of accuracy in the standards one applies to the construction itself. I see nothing laudable in giving visitors to exhibitions, including the young, the idea that the real railway, although it looks like that modelled, performs other than the way it is portrayed.

A recent show sported a layout aimed specifically at youngsters – construction was based throughout on proprietary products; it ran, non-stop, in a continuous loop; and it had several chairs placed around it upon which youngsters could sit and watch – a nice touch. In terms of realistic presentation and running, it was abysmal, but that did not matter. The young minds were being entertained and encouraged to take an interest in the hobby and, with nurture, this could mature into adult appreciation. The exhibit did not pretend that the real railway behaved like this – its purpose was specific: the entertainment and the encouragement of the young.

Another, more up-market show included an interesting, unfinished layout operating accurate, well-constructed, and beautifully-painted models with rigid chassis which fell off fairly frequently! The comment, from their constructor – when it was suggested that some form of suspension might prevent this – was "Oh well, it's the cosmetic aspect that counts!" Operational reliability and accuracy, tacitly, was of no interest, yet the fundamental purpose of trains is to move, not just look good! We have concentrated on the latter without sufficient regard to the former since the hobby began. Elsewhere in the hall, I witnessed an O gauge, finescale Collett 0–6–0 leave its rake of wagons at a rate of acceleration which would have shamed a Ferrari! It approached a turntable, leading directly to an engine shed, at about 45 mph, and decelerated and stopped within a rail's length. This made me cringe and leave. These layouts offer a different picture to the public and, I feel, have a certain responsibility to present operational accuracy and the illusion of scale movement, which goes hand in hand with the constructional realism they obviously strive to attain. If I am viewing an attempt at the accurate miniature replication of the real thing, I expect accurate methods of operation also to be in evidence – I do not expect it to be operated like a toy. The illusion is shattered when a hand lifts a vehicle back onto the track, or a finger pokes an engine, or a wagon is shunted so vigorously that it is derailed by the impact. There should be, in a well constructed and well run layout, no derailments, no locomotives reluctant to move and no collisions. We could also do with convincing sound systems, as has been suggested by David Birch, and wreaths of realistic steam, both co-ordinated with the movement of engines.

One of the main problems is not the tendency to run too slowly, but rather, as Neil Burgess stated, the problem of the perception of speed, and the time taken to perform the necessary adjuncts to shunting, such as those involved in the uncoupling and coupling of vehicles, brake tests, and so on. And with speed comes the question of momentum. Locomotive wheels start slowly to revolve, then accelerate smoothly and – yes, somewhat ponderously – to moderate speeds appropriate to the locomotive and the duty it is undertaking. Only *Mallard*, among steam locomotives, has been timed at 125 mph, and then under very special circumstances. Model locomotives, however, typically do not move at all until a certain amount of power becomes available, sufficient to overcome physical and electrical resistance, after which they lurch perceptibly forward, destroying an illusion of mass and effort. I am completing a shunter, in ScaleSeven, and, desirous of performance which matches the mechanical accuracy demanded by this scale, I have experimented with the recently available Red Arrow infra-red system. Using rechargeable batteries as a power source, the difficulties associated with current collection, electrical resistance between rail and wheel, dirty track, and the uneven physical resistance imposed upon the mechanism by the effect of pick-ups rubbing against wheels, are removed immediately and completely. This, together with a quality, high-ratio gearbox and high efficiency, low current Maxon motor, has resulted in an engine which moves off from rest every time and then smoothly accelerates up to a scale top speed, as does the prototype, of 25-30 mph – not 80! Thus, some sense of the weight of the engine is felt. I have never bettered this performance in all past attempts at locomotive construction, and driving practices of old have had to be reviewed. The locomotive has now, indeed, to be really driven to avoid collisons and rough shunts. Buffering-up – even touching the wagons without moving them – is easily accomplished and a delight to perform, and this is what real engines could do! This satisfies my criteria of how a model locomotive should perform. If your criteria are different, then that's fine – but please allow me my slow deliberate starts and a respectable build-up to a moderate speed which I find prototypical. I watched the neo-USA tank shunting at Swanage a few days ago, and it certainly did not behave like a Ferrari!

Dave Gosling
Salisbury
Wilts

On this subject, we have received a handful of letters of the 'how-dare-these-intolerant-people-dictate-to-me' variety. Would correspondents please note that all personal opinions which expand on this topic, whilst not necessarily shared by MRJ, are welcomed in this forum for debate. *Editor*

DIARY

JULY

12/13 **Southwark Model Railway Club** South East London Model Railway Show (Greenwich and Docklands International Festival) at the University of Greenwich, Island Building, Thomas Street, off Wellington Street, Woolwich, London, SE18. 10.30 – 5.00. £2.50/£1.00/£5.00.

12/13 **Wimbledon Model Railway Club/Lavender Line Preservation Society** model railway weekend at the Lavender Line, Isfield Station, near Uckfield, East Sussex. 10.00 – 6.00 (Sat), 10.30 – 5.30 (Sun). £4.00/£3.00/£12.00.

12/13 **Newcastle & District Model Railway Society** Tyneside Summer Model Railway Exhibition at the Discovery Museum, Blandford Square, Newcastle upon Tyne, Tyne & Wear. 10.00 – 5.00. £2.00/£1.00.

20 **Taunton Model Railway Group** exhibition (in aid of Cancer and Leukaemia in Childhood Trust) at Bishops Lydeard Station, West Somerset Railway, near Taunton, Somerset. 10.30 – 5.00. £1.00/30p. Sponsors: Nuclear Electric.

26 **Norwood MRC** Open Day & Garden Party at 64A Kempshott Road, Streatham, London SW16. 10.30 – 4.30. Admission free.

26/27 **Kew Bridge Steam Museum** Festival of Model Tramways at Green Dragon Lane, Brentford, Middlesex. 11.00 – 5.00. Usual museum admission prices apply.

AUGUST

2/3 **Waveney Valley Model Railway Club** exhibition at the Beachcomber Room, The Pier, Southwold, Suffolk. 10.30 – 6.00 (5.00 Sun). £2.00/£1.00/£5.00.

2/3 **Lytham St. Annes Railway Society** exhibition at Lowther Pavilion, Lowther Gardens, East Beach, Lytham. 10.00 – 8.00 (6.00 Sun). Admission prices not advised.

9/10 **National Railway Museum** Hornby tinplate weekend at the Museum, Leeman Road, York. Museum times and admission apply.

10 **Vale of Aeron Railway Society** model railway exhibition at Aberaeron Comprehensive School, Aberaeron, Dyfed. 10.30 – 5.00. £1.60/£1.00.

16 **Kirkwood Hospice** model railway exhibition at Huddersfield Technical College, Portland Building, Huddersfield, West Yorkshire. 10.00 – 5.00. £1.50.

16/17 **South Manchester Model Railway Group** first exhibition in aid of 174 (Manchester) Squadron Air Training Corps, at the T.A. Centre, Norman Road (off Wilmslow Road), Rusholme, Manchester. 10.00 – 6.00 (5.00 Sun). £1.75/£1.00.

16/17 **Cleveland Model Railway Club** exhibition at Redcar 'Bowl' Leisure Centre, Majuba Road, Redcar. 10.00 – 6.00 (5.00 Sun). £2.20/£1.00/£5.00.

RAILWELLS
and
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LAYOUTS
ABERHAFREN
P4, Mendip MRG
CHISELDON
P4, Dave Barrett
CLUTTON
P4, Tim Venton
CRICHEL DOWN
P4, Martin Goodall
ULPHA LIGHT RAILWAY
P4, Norwood MRC
ZOB
Pioneering P87, Brian Harrap
BODESMEER YARD
P87, Iain Rice

23/24 **Heart of Wales Lines Travellers' Association** annual railway exhibition at Coleg Powys, Spa Road, Llandrindod Wells, Powys, Mid Wales. 10.30 – 5.00. Admission free.

23-25 **Skipton & District Railway Society** exhibition at Ermysted's Grammar School, Gargrave Road, Skipton, North Yorkshire. 10.00 – 6.00 (5.00 Mon). £2.00/£1.00.

23-25 **Corris Railway Society** model railway exhibition at the Drill Hall/Community Centre, Machynlleth, Powys, Wales. 11.00 – 5.00. Admission prices not advised. Look out for 'Corris' by Peter Kazer.

30/31 **Sunderland & District Model Railway Society** 21st exhibition at the Seaburn Centre, Seaburn, Sunderland, Tyne & Wear. 10.00 – 6.00 (5.00 Sun). £2.50/£1.00/£6.75.

SEPTEMBER

6 **Witham Model Railway Society/Talyllyn Railway Preservation Society** open day at the British Legion Hall, Newland Street, Witham, Essex. 10.30 – 4.30. 60p/children free.

WAKEFIELD MODEL RAILWAY SHOW
Change of date
Owing to the forced change of date made on the Manchester MRS, the Wakefield MRS have agreed with them to exchange dates. Therefore, the new date for the Wakefield MRS Show will be **5th, 6th & 7th December.**

HISTORICAL MODEL RAILWAY SOCIETY

Worcester Area: 7.30 at 'The Cherry Orchard', Orchard Street, Worcester.

9th July 1997. 'Modelling the Irish Narrow Gauge': Andy Cundick.

10th September 1997. 'Landscape Construction': John Lloyd.

West Midlands Area: 3rd September 1997. 7.30 at the Perton Community Centre, Perton Shopping Precinct, Wolverhampton. 'Modelling the London and Birmingham Railway': Ian and Mary Forsyth.

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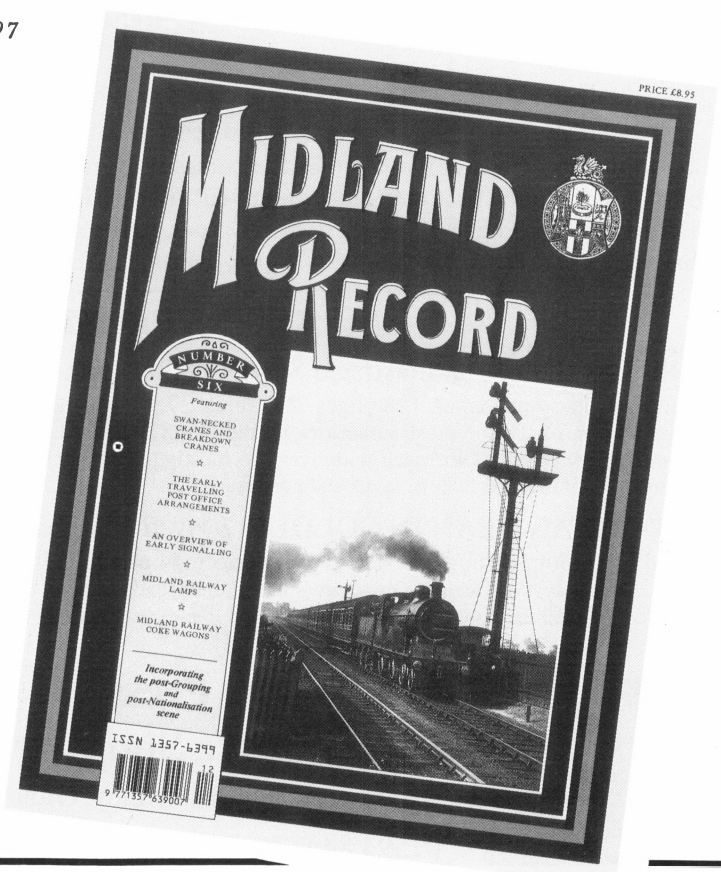

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Issue 9 has articles on Gatwick Airport and its 'Beehive' terminal; Mitcheldean Cement Works; A-Z of Sailing Craft 'B' for Billy Boy; The Aire & Calder Navigation Part 2; and Aspatria Collieries Part 1.

Issue 10 featured Iron Making at Wellingborough; A-Z of Sailing Craft 'C' for Coble; Aspatria Collieries Part 2; The Weaver Packets; The Dartmoor Peat Tramway and Gatwick Airport Part 2.

Issue 11 stars Bugsworth Basin; Aspatria Collieries Part 3; The Quakers Yard and Merthyr Joint Railway; A-Z of Sailing Craft 'D' for Doble; The *SS Hayle* aground; More on the *TS Cornwall*; and Cunard Shellworks, Liverpool.

Issue 12 has a in depth feature on Severn Trows; the Widening of Taff Vale Viaduct; Willow Mill, Caton, Lancs.; A-Z of Sailing Craft 'E' for Emsworth Smack'; Southampton Graving Dock; Water Pumping Works Architecture.

Issue 13 features Deep Navigation Colliery, Treharris; The chameleon barque, *Success*; and the Calder & Hebble Canal.

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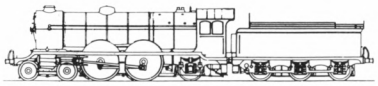

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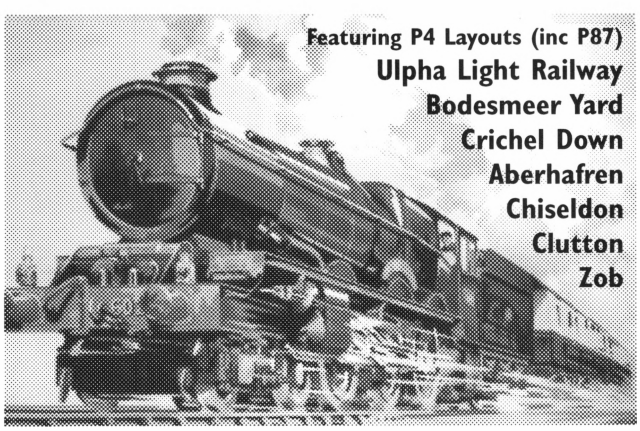

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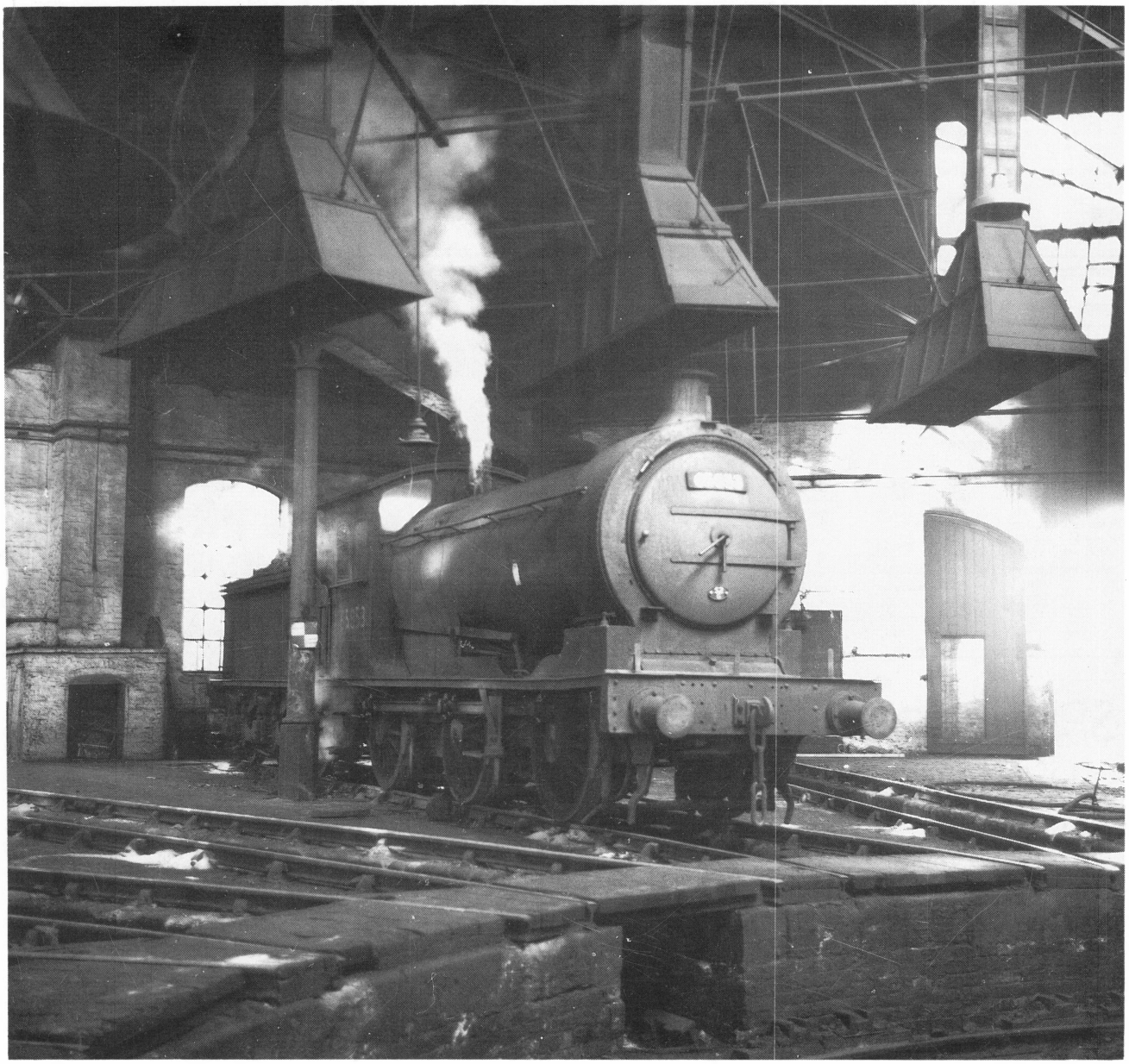

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